RADIO FREQUENCY

FOR

INDUSTRY

SCIENCE

OEM MANUFACTURERS

COMMUNICATIONS

MEDICINE

MILITARY

Amplifiers
Transmitters
Power Generators

Frequency Coverages: 1.8 to 500 MHz

Output Powers: 2 to 10,000 watts

made in U.S.A.

APPLICATIONS: Transmitters, beacon transmitters, optical emission spectrometry, medical research, medical therapy, sputtering, plasma etch, nuclear resonance, laser excitation, meteor burst communications, telemetry, plasma generation - - wherever radio frequency power is required for any reason.

LONG SERVICE LIFE: Modern, simple circuit design with conservatively-rated components assure a long, reliable service life.

HISTORY: Our RF equipment has been used all over the world for the last 20 years for many different applications by governments, universities, hospitals, research institutes, semi-conductor industry, optical emission researchers, communications industry. . . plus many others. We have a history of reliable, economical radio frequency devices.

SUPERIOR FILTERING: All the equipment meets FCC and OSHA requirements for reduction of cabinet and radiated emissions. All equipment is designed with the safety of the operator in mind.

HENRY RADIO

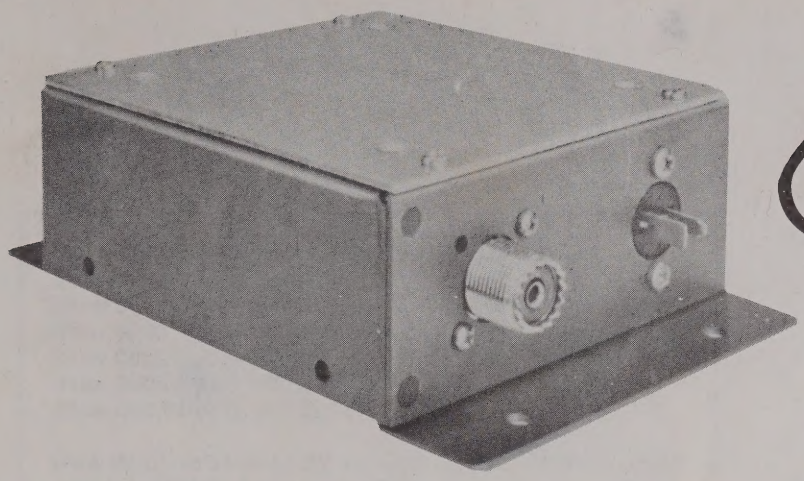
1-800-421-6631

(In California call (213) 820-1234)

2050 S. Bundy Drive, Los Angeles, CA 90049

Power Amplifiers

FREQUENCY RANGE	DRIVE POWER RANGES	OUTPUT POWER RANGES
1.8 to 50 MHz (limited bandwidth)	10 milliwatts 2 watts 10 watts 30 watts 100 watts 250 watts	20 watts 100 watts 250 watts 500 watts 1000 watts 2000 watts 3000 watts 5000 watts 10,000 watts
30 to 100 MHz (limited bandwidth)	10 milliwatts 2 watts 10 watts 30 watts 100 watts	20 watts 100 watts 500 watts 1000 watts 2000 watts Higher Power Special Only
100 to 200 MHz (limited bandwidth)	10 milliwatts 2 watts 10 watts 30 watts 100 watts	25 watts 50 watts 80 watts 100 watts 500 watts 1000 watts 2000 watts Higher Power Special Only
200 to 400 MHz (limited bandwidth)	Special Only	Special Only
400 to 512 MHz (limited bandwidth)	10 milliwatts 2 watts 10 watts 30 watts	25 watts 40 watts 70 watts 100 watts Higher Power Special Only
Above 512 MHz (limited bandwidth)	Special Only	Special Only



Transmitters

FREQUENCY RANGE	MODEL NUMBER	MAXIMUM OUTPUT POWER
1.8 to 50 MHz (single channel only)	20B 100B 200B 500B 1000B 2000B 3000B 5000B Higher Power Special Only	20 watts 100 watts 200 watts 500 watts 1000 watts 2000 watts 3000 watts 5000 watts
100 to 200 MHz (single channel only)	2A 30A 50A 80A 120A 500A 1000A 2000A Higher Power Special Only	2 watts 30 watts 50 watts 80 watts 120 watts 500 watts 1000 watts 2000 watts
400 to 512 MHz (single channel only)	2E 25E 40E 70E 100E Higher Power Special Only	2 watts 25 watts 40 watts 70 watts 100 watts

SPECIFICATIONS

DESIGNED FOR CONTINUOUS DUTY OPERATION

CABINETRY AVAILABLE FOR MANY DIFFERENT CONFIGURATIONS

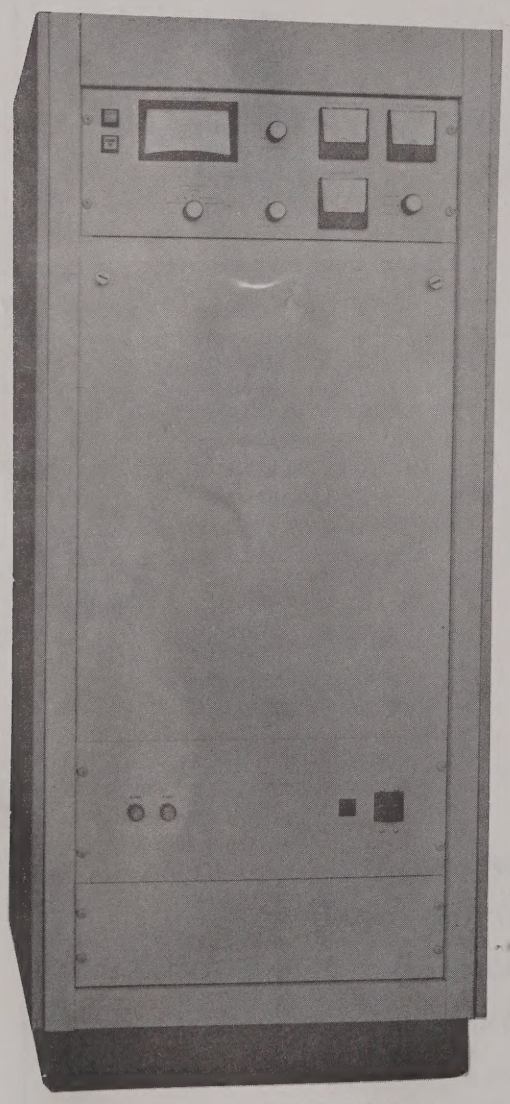
TONE AND IDENTIFYING OPTIONS AVAILABLE FOR MOST STANDARD FORMATS

VOLTAGE OPTIONS OF 13.8 VDC, 110 VAC, 200 VAC, 220 VAC, 240 VAC, OR 440 VAC

HARMONIC AND OTHER SPURIOUS EMISSIONS REDUCED PER APPROPRIATE REGULATIONS

PROMPT DELIVERY AVAILABLE ON MOST STANDARD MODELS

Power Generators



Model 3000D Shown

POWER GENERATOR SPECIFICATIONS

OUTPUT POWER:

500D:	0 to 500 watts
1000D:	0 to 1000 watts
2000D:	0 to 2000 watts
5000D:	0 to 5000 watts
10,000D:	0 to 10,000 watts

FREQUENCY: 13.56 MHz or 27.12 MHz or 40.68 MHz
With better than 1 KHz stability.

DUTY CYCLE: Continuous duty operation.

CABINETRY: Each unit comes completely enclosed in a rack panel cabinet with casters.

EXCITER: Completely solid state, self-contained crystal controlled exciter.

OUTPUT IMPEDANCE: 52 ohms unbalanced, with SWR not to exceed 2:1.

SPECIAL FEATURES:

Constant power accessory built-in - tolerance 2%.

AC ripple reduced to less than 2% on output signal.

Line voltage taps for 208, 220, or 240 VAC operation.

Simplified controls - operation by non-technical personnel.

0 to —1 VDC input signal accepted for constant power feedback signal from the target.

0 to —5 VDC remote control power adjust signal accepted.

Built-in reflected power protection circuit.

Designed to accept microprocessor production control.

Power output continuously adjustable from 0 to full output.

Conservative, heavy-duty components for maximum useful service life.

Self-contained Bird power sensor for forward and reflected power readings.

HARMONIC AND OTHER SPURIOUS EMISSIONS: Reduced in accordance with FCC and OSHA regulations.

TUBE COOLING: Forced air cooling.

A 20 YEAR RECORD OF RUGGED, RELIABLE RF POWER GENERATORS.

MADE IN THE USA

HENRY RADIO Inc.

HENRY AMPLIFIERS PRICE LIST
June 1989

HF AMPLIFIERS

		LIST
2KD STANDARD *	Single 3-500Z Desk SSB Amp	1095.00
2KD CLASSIC	Desk Model Linear Amplifier	1395.00
2K CLASSIC	Console Amplifier	1525.00
2K CLASSIC X	Domestic Console	1795.00
2K CLASSIC X	Export Console	1995.00
2K CLASSIC X RF	RF Deck only	1295.00
3KD CLASSIC *	Single 3CX1200A7 Desk Amp	1895.00
3K CLASSIC MKII	Domestic Console	2495.00
3K CLASSIC MKII	Export Console	2695.00
3K CLASSIC RF	RF Deck only	1695.00
5K CLASSIC	Export Console	3895.00
5K CLASSIC RF	RF Deck only	2495.00
* To Be Announced		
3K PREMIER	Console Amp. with 160 meters	2995.00
3KD PREMIER	Desk Amp. with 160 meters	2195.00

VHF AND UHF AMPS

2002A	146 MHZ Desk Amplifier	1395.00
2002A RF	RF Deck only	995.00
2002A-220	220 MHZ Desk Amplifier	1395.00
2002A-220RF	RF Deck only	995.00
2006A	50 MHZ Desk Amplifier	1395.00
2006A RF	RF Deck only	995.00
2004A	440 MHZ Desk Amplifier	1495.00
2004A RF	RF Deck only	1095.00
3002A	146 MHZ Console Amplifier	2395.00
3002A RF	RF Deck only	1595.00
3002A-220	220 MHZ Console Amplifier	2395.00
3002A-220 RF	RF Deck only	1595.00
3006A	50 MHZ Console Amplifier	2395.00
3006A RF	RF Deck only	1595.00
3004A	440 MHZ Console Amp / 8938	2995.00
3004A RF	RF Deck only / 8938	2195.00
ANTENNA RELAY	For 2004A series	195.00
ANTENNA RELAY	For 3000 series	275.00
2002A SERIES	Set on non-ham frequencies	1995.00
3002A SERIES	Set on non-ham frequencies	2995.00
RF SENSING RELAY	Optional RF Keying Circuit	50.00

Please contact us directly for further information on these models or for information on our commercial, industrial or medical RF equipment.

HENRY RADIO 2050 S. Bundy Dr. Los Angeles, CA 90025
213-820-1234 -- 800-877-7979 -- TLX 67-3625 -- FAX 213-826-7790

HENRY RADIO

A UNIQUE FAMILY OF VHF AND UHF LINEAR AMPLIFIERS

1006A	1002A	1004A
2006A	2002A	2004A
3006A	3002A	3004A

There has never before been such a complete family of VHF and UHF amplifiers offered for amateur, scientific, industrial, military, or commercial communications. Choose a frequency between 30 and 500 MHz and you have a choice of amplifiers to meet your required output power. All of the models are available for the standard amateur 6 meter (50-54 MHz), 2 meter (144-148 MHz), and 70 cm (420-450 MHz) bands. Special versions are readily available for other frequency ranges. The 1006A, 2006A, and 3006A are available on frequencies between 30 and 100 MHz. The 1002A, 2002A, and 3002A are available on frequencies between 100 and 300 MHz. The 1004A, 2004A, and 3004A are available on frequencies between 300 and 500 MHz. All of the amplifiers are biased for linear operation so that they operate for CW, FM, SSB, AM, or pulse applications.

The 1006A, 1002A, and 1004A use a single Eimac 8874 ceramic triode giving up to 1000 watts for pulse operation, up to 600 watts for SSB operation, and up to 200 watts for continuous applications.

The 2006A, 2002A, and 2004A use a single Eimac 3CX800A7 ceramic triode offering up to 2000 watts for pulse operation, up to 1200 watts for SSB operation, and up to 400 watts for continuous applications.

The 3006A, 3002A, and 3004A use a single Eimac 8877 ceramic triode mated to a heavy duty power supply offering up to 4000 watts for pulse operation, 2000 watts for SSB operation, and 1000 watts for continuous applications.

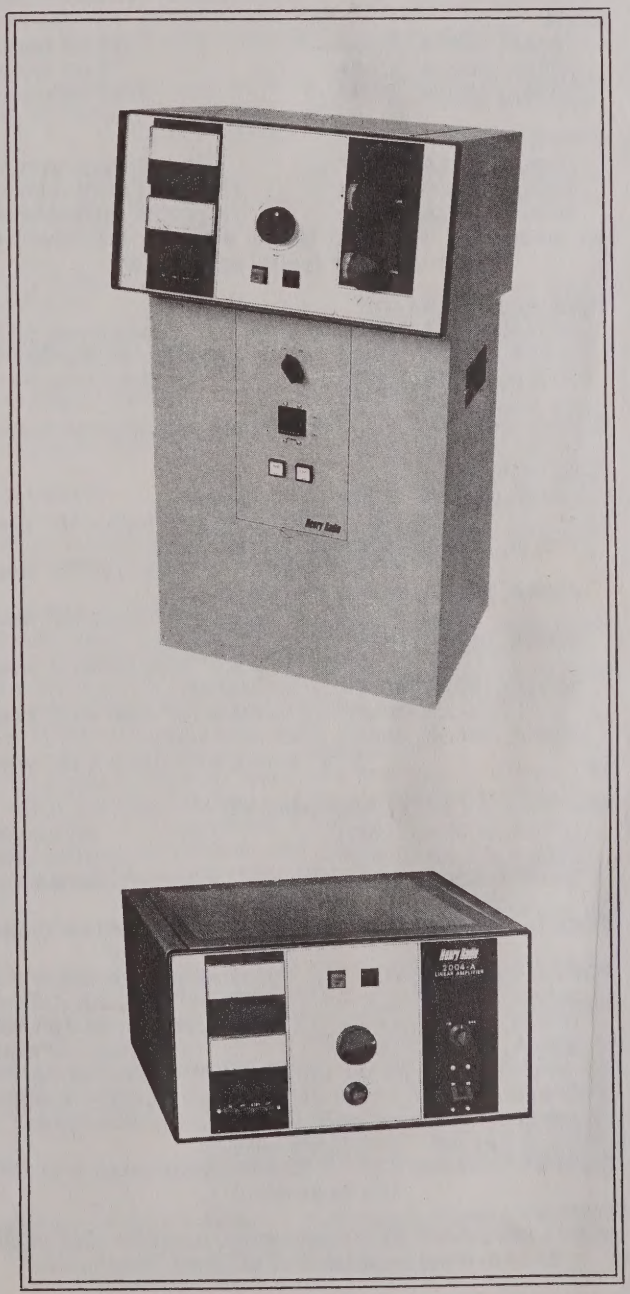
All of the amplifiers above 100 MHz employ simple, reliable and elegant strip-line tank circuits which give unexcelled performance with a minimum number of components. The VHF amplifiers employ a ¼ wave strip-line and the UHF models employ a ½ wave strip-line. Amplifiers below 100 MHz (in general) use standard Pi-L tank circuits. All models include adjustable input circuits for good input matching to your exciter.

Each model is available in a self-contained cabinet - - the 1000 and 2000 series in desk top cabinets, and the 3000 series in a floor console. Or alternately each model is available designed for rack mounting.

All 1000 series amplifiers set up for amateur bands, and the 2006A and 2002A on amateur bands are provided with antenna relays. Relays are optional on the 2004A and all versions of the 3000 series amplifiers. Antenna relays are optional on all non-amateur band amplifiers used for commercial, industrial, or scientific purposes.

On models below 300 MHz the gain figure for all amplifiers is typically 13 dB or greater (20 times drive power). Since all the models are linear, they can be driven with any power. For models above 300 MHz the gain figure for all amplifiers is typically 10 dB or greater (10 times drive power).

As with all of the other quality equipment offered in the growing family of Henry amplifiers these UHF and VHF models include only the highest quality RF and DC components available. There is no skimping in design or component considerations in any Henry amplifier. Join the thousands of satisfied Henry amplifier owners around the world and find the joy of a well made linear amplifier.



VHF AND UHF AMPLIFIER SPECIFICATIONS

TYPE AND FUNCTION OF EQUIPMENT: All models are linear RF power amplifiers operating in a frequency band between 30 and 500 MHz. They can be used for communications, industry, or scientific research.

TYPE OF EMISSION: Pulse, SSB, AM, CW, FM, or RTTY.

OUTPUT POWER:

1006A, 1002A, 1004A -	1000 watts pulse.
	600 watts SSB.
	300 watts FM.
	200 watts continuous.
2006A, 2002A, 2004A	2000 watts pulse.
	1200 watts SSB.
	600 watts FM.
	400 watts continuous.
3006A, 3002A, 3004A -	4000 watts pulse.
	2000 watts SSB.
	1500 watts FM.
	1000 watts continuous.

GAIN:

1006A, 2006A, 3006A -	13 dB typical.
1002A, 2002A, 3002A -	13 dB typical.
1004A, 2004A, 3004A -	10 dB typical.

DRIVE POWER:

1006A, 1002A, 1004A -	15 to 50 watts nominal.
2006A, 2002A, 2004A -	15 to 100 watts nominal.
3006A, 3002A, 3004A -	25 to 200 watts nominal.

All models are linear and can be driven at any drive level for output at typical gain figures.

TUBE COMPLEMENT:

1006A, 1002A, 1004A -	One Eimac 8874.
2006A, 2002A, 2004A -	One Eimac 3CX800A7.
3006A, 3002A, 3004A -	One Eimac 8877.

DUTY CYCLE: Continuous duty at rated output.

DIMENSIONS:

1006A, 1002A, 1004A (Rack Mount) -
2 Rack Panels - 19" wide x 7" high x 18" deep.

1006A, 1002A, 1004A (Cabinet Mount) -
17.25" wide x 9.5" high x 19.75" deep.

2006A, 2002A, 2004A (Rack Mount) -
2 Rack Panels - 19" wide x 7" high x 18" deep.

2006A, 2002A, 2004A (Cabinet Mount) -
17.25" wide x 9.5" high x 19.75" deep.

3006A, 3002A, 3004A (Rack Mount) -
2 Rack Panels - 19" wide x 14" high x 18" deep.

3006A, 3002A, 3004A (Cabinet Mount) -
32¾" high x 16½" deep x 15" wide.

SHIPPING WEIGHT (Approximate):

1006A, 1002A, 1004A -	55 pounds.
2006A, 2002A, 2004A -	80 pounds.
3006A, 3002A, 3004A -	180 pounds.

COOLING: Forced air cooled.

POWER REQUIREMENTS: 3 Wire, single phase, 60 Hz.

1006A, 1002A, 1004A -	115/230 VAC, 20/10 amps.
2006A, 2002A, 2004A -	115/230 VAC, 30/15 amps.
3006A, 3002A, 3004A -	230 VAC, 30 amps.

All amplifiers can be set up for 50 Hz operation, or 200 VAC operation, or 2 wire 220 VAC operation - - But that special requirement must be specified when ordered.

OUTPUT IMPEDANCE: 50 ohms unbalanced with SWR not to exceed 2:1.

INPUT IMPEDANCE: Tuned input circuits are used to give 50 ohm input impedance at different frequencies.

FREQUENCY RANGE:

1006A, 2006A, 3006A	50 to 54 MHz.
1002A, 2002A, 3002A	144 to 148 MHz.
1004A, 2004A, 3004A	430 to 450 MHz.

Special frequency bands are available as follows:

1006A, 2006A, 3006A -
Any 5 MHz band between 30 and 100 MHz.

1002A, 2002A, 3002A -
Any 10 MHz band between 100 and 300 MHz.

1004A, 2004A, 3004A -
Any 20 MHz band between 300 and 500 MHz.

METERING:
Rack Panel Models - 1 switched meter to read plate current, grid current, and plate voltage.
Cabinet Models - 2 meters, 1 to read plate current and 1 switched meter for grid current and plate voltage.

HARMONIC AND OTHER SPURIOUS RADIATION:
Second harmonic better than 50 dB down. Third order distortion betten than 35 dB down.

NOISE LEVEL: 40 dB down or better below one tone carrier at 1000 watts ouput.

CONTROLS: Input Tuning, Output Tuning, Load Tuning, Meter Switch, Standby Switch, SSB/CW switch (Cabinet Models), circuit breaker on/off, and primary fuses.

RELAY KEYING: A built-in DC power supply operates at 12 VDC nominal to key the antenna relays (when supplied) when the relay jack is shorted to ground.

ANTENNA RELAYS: A transmit/receive relay system is included on all 1000 amplifiers, the 2006A, and 2002A for amplifiers supplied on amateur band frequencies. On all other models, and on special frequency amplifiers the antenna relays are optional.

PROTECTION DEVICES: All circuits fused or circuit breaker protected.

PLATE VOLTAGE:

1006A, 1002A, 1004A -	1800 - 2200 VDC.
2006A, 2002A, 2004A -	SSB - 2200 - 2600 VDC.
	FM/CW - 1800 - 2200 VDC.
3006A, 3002A, 3004A -	SSB - 3700 - 3900 VDC.
	FM/CW - 2700 - 2900 VDC.

The plate voltage figures above are nominal and vary with the line voltage at the operating position.

OTHER FEATURES:
Conservative power supply components for superb dynamic regulation in the high voltage supply.
Semiconductor diode rectifiers to insure long and reliable life.
DC relay system for hum free operation.
All aluminum cabinetry with double shielding in the RF areas for minimum cabinet radiation.
Strip-line technology (above 100 MHz) for simple circuit design and high reliability.
Backed by a 25 year history of the finest RF equipment available to the amateur and commercial market

MADE IN THE U.S.A.

HENRY RADIO

2050 South Bundy Drive Los Angeles, California 90025
(213) 820-1234

CLASSIC CONSOLE SPECIFICATIONS

TYPE AND FUNCTION OF EQUIPMENT: All models are floor console linear RF power amplifiers operating in the 3.5 to 30 MHz frequency range. They can be used for communications, industry, or scientifc research.

TYPE OF EMISSION: SSB, AM, CW, FM, RTTY.

OUTPUT POWER:

2K Classic	1200 watts PEP nominal. 750 watts continuous carrier nominal.
2K Classic X*	2000 watts PEP nominal. 1000 watts continuous carrier nominal.
3K Classic Mark II	1500 watts PEP nominal. 750 watts continuous carrier nominal.
3K Classic X Mark II*	2500 watts PEP nominal. 1500 watts continuous carrier nominal.
5K Classic*	3500 watts PEP nominal. 1500 watts continuous carrier nominal.

GAIN:

2K Classic	10 dB nominal.
2K Classic X*	10 dB nominal.
3K Classic Mark II	13 dB nominal.
3K Classic X Mark II*	14 dB nominal.
5K Classic*	14 dB nominal.

DRIVE POWER:

2K Classic	80 to 120 watts nominal.
2K Classic X*	80 to 200 watts nominal.
3K Classic Mark II	60 to 100 watts nominal.
3K Classic X Mark II*	60 to 120 watts nominal.
5K Classic*	60 to 200 watts nominal.

TUBE COMPLEMENT:

2K Classic	2 - Eimac 3-500Z
2K Classic X*	2 - Eimac 3-500Z
3K Classic Mark II	Eimac 3CX1200A7
3K Classic X Mark II*	Eimac 3CX1200A7
5K Classic*	2 - Eimac 3CX1200A7

DUTY CYCLE: Continuous duty at rated output.

DIMENSIONS: 32¾" High x 16½" Deep x 15" Wide.

SHIPPING WEIGHT:

2K Classic	125 pounds (2 boxes).
2K Classic X*	190 pounds (2 boxes).
3K Classic Mark II	125 pounds (1 box).
3K Classic X Mark II*	190 pounds (1 box).
5K Classic*	200 pounds (1 box).

COOLING: Forced air cooled.

POWER REQUIREMENTS: 3 Wire, single phase, 60 Hz.

2K Classic	115/230 VAC, 30/15 amps.
2K Classic X*	230 VAC, 30 amps.
3K Classic Mark II	230 VAC, 30 amps.
3K Classic X Mark II*	230 VAC, 30 amps.
5K Classic*	230 VAC, 40 amps.

All amplifiers can be set up for 50 Hz operation, or 200 VAC operation, or 2 wire 220 VAC operation - - But that special requirement must be specified when ordered.

ALC CIRCUIT: All models have an adjustable ALC feedback circuit to prevent overdrive from a high power exciter.

FREQUENCY RANGE:

80 meters - 3.5 to 4.0 MHz
40 meters - 7.0 to 7.5 MHz
20 meters - 14.0 to 14.5 MHz
15 meters - 21.0 to 21.5 MHz
10 meters - 28.0 to 28.5 MHz

10 meters coverage is available on export models only. The amplifiers will work on all WARC bands and most frequencies between 3.5 and 30 MHz.

OUTPUT IMPEDANCE: 50 ohms unbalanced with SWR not to exceed 2:1.

INPUT IMPEDANCE: Tuned input circuits are used to insure a 50 ohm input impedance at different frequencies.

METERING: Two panel meters monitor plate voltage, plate current and grid current.

HARMONIC AND SPURIOUS RADIATION: Second harmonic better than 50 dB down. Third order distortion better than 35 dB down at full output.

NOISE LEVEL: 40 dB down or better below one tone carrier at 1000 watts output.

CONTROLS: Band selector, load control, tune control, meter switch, standby switch, SSB/CW switch, circuit breaker ON/OFF switch, and primary fuses.

REAR PANEL CONNECTIONS: RF input (BNC type connector), RF output (UHF type connector), ALC jack (RCA type jack), Relay jack (RCA type jack).

RELAY KEYING: A built-in DC power supply operates at 12 VDC nominal to key the antenna relay when the relay jack is shorted to ground.

PROTECTIVE DEVICES: High voltage shorting switch, air flow switch (on the 3K and 5K models), primary fuses, primary circuit breaker, and cathode fuse.

PLATE VOLTAGE:

2K Classic	SSB: 3000 - 3200 VDC CW: 2000 - 2200 VDC
2K Classic X*	SSB: 3700 - 3900 VDC CW: 2700 - 2900 VDC
3K Classic Mark II	SSB: 3000 - 3200 VDC CW: 2000 - 2200 VDC
3K Classic X Mark II*	SSB: 4200 - 4400 VDC CW: 2700 - 2900 VDC
5K Classic*	SSB: 4200 - 4400 VDC CW: 2700 - 2900 VDC

The plate voltage figures above are nominal and vary with the line voltage at the operating position.

OTHER FEATURES:

Conservative power supply components for superb dynamic regulation in the high voltage supply.

Resonant choke input and oil filled capacitors (excluding the 2K Classic) to improve high voltage regulation.

Semiconductor diode rectifiers (1.2 amp, 15 KV) to insure long and reliable life.

The antenna relay automatically transfers to the exciter when the meter switch is in the standby position or the equipment is turned off.

DC relay system for hum free operation.

Advanced fast-acting relay circuits for semi-break-in CW operation.

All aluminum cabinetry with double shielding in the RF areas for minimum cabinet radiation.

Pi-L plate circuit with silver plated tank coil to insure the cleanest most efficient output.

Backed by a 25 year history of the finest RF equipment available to the amateur market.

*For sale only for export, military, or industrial users.

HENRY RADIO

2050 South Bundy Drive Los Angeles, California 90025
(213) 820-1234

HENRY RADIO

3.5 TO 30 MHZ
CONSOLE MODEL
LINEAR AMPLIFIERS

2K CLASSIC

2K CLASSIC X

3K CLASSIC Mark II

3K CLASSIC X Mark II

5K CLASSIC

Henry Radio now offers a complete line of floor console high frequency linear amplifiers for amateur, military, commercial, or industrial users. All of the models operate on frequencies between 3.5 and 30 MHz.

The 2K Classic is the basic workhorse amplifier using two time proven 3-500Z glass envelope triodes. The 2K Classic offers approximately 1200 watts of PEP RF output for reliable SSB or CW operation for the amateur operator. The amplifier gives about 10 dB of gain (output is about 10 times the drive power).

The 2K Classic X mates the reliable 2K Classic RF deck (with several important improvements) to the heavy duty power supply of the 3K Classic X. This amplifier is designed for the military or commercial user who needs reliable operation in high duty cycle circumstances. A domestic version of this amplifier is available using a smaller transformer for sale to amateur operators in the United States. Also using 3-500Z tubes, the amplifier offers about 10 dB of gain.

The 3K Classic Mark II uses the rugged ceramic 3CX1200A7 triode from Eimac. This tube offers a minimum of 13 dB of gain (output is about 20 times the drive power), making it more useful for operators with lower power exciters. This amplifier uses a moderate duty power supply for operation in the United States.

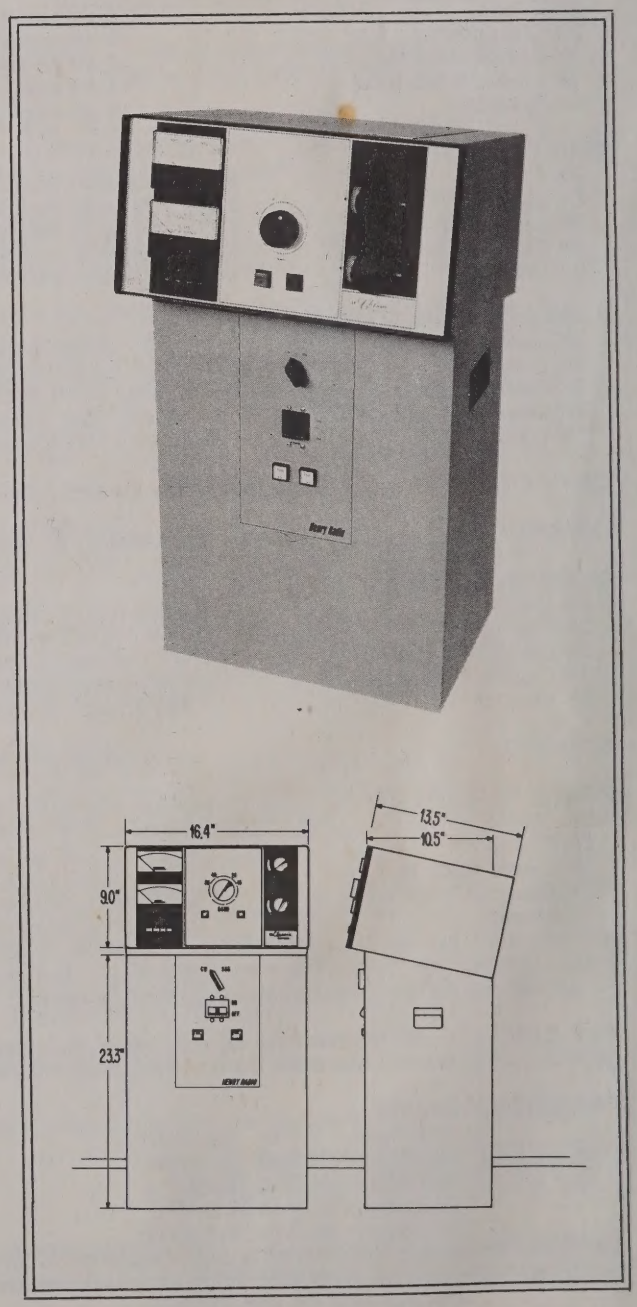
The 3K Classic X Mark II mates the 3K Classic RF deck with a heavy duty power supply (available for export sales only) offering a high gain amplifier with the reliability of an industrial type power supply.

The 5K Classic uses two 3CX1200A7 in conjunction with the heavy duty power supply for a minimum of 3500 watts PEP output in military or commercial applications. This amplifier is available for sale only to military, export, or industry users.

All Henry amplifiers use only the highest quality, most reliable components. They are fashioned to the exacting requirements of the commercial, military, or industrial user who requires trouble-free operation year after year. These amplifiers offer exceptional simplicity in their grounded grid design, without sacrificing any performance specifications.

Several design features guarantee the sharpest, most linear, most reliable signal output from any amplifier available in today's market. The Classic design includes a unique silver plated variable tank coil for the tune control. The design goal is a Q of between ten and twelve on each band resulting in higher operating efficiency, greater linearity, and superb attenuation of unwanted signals. Tuned cathode-pi input circuits are used in all the models to allow matching to solid-state exciters. All of our amplifiers use aluminum cabinets and double RF shielding to offer maximum attenuation of unwanted cabinet radiation.

We invite comparison of our Classic models with any other amplifier available commercially. The discerning buyer will find that there is no comparison. All Henry amplifiers are backed with a 25 year history of continuing, solid performance. Talk with the owner of a Henry amplifier. You will find out what it is like to own the very best.



HENRY 2KD STANDARD AND 3KD CLASSIC AMPLIFIER SPECIFICATIONS

TYPE AND FUNCTION OF EQUIPMENT: The 3KD Classic and 2KD Standard are desk top linear amplifiers designed for communications on frequencies in the 3.5 to 30 Mhz band. The 3KD Classic is designed for 1500 watts PEP output, and the 2KD Standard is designed for 1200 PEP output.

These amplifiers are used for communications in amateur, commercial, and military service. They can also be used for special applications in industrial and scientific services.

TYPE OF EMISSION: SSB, AM, CW, FM, RTTY, PULSE

OUTPUT POWER: 2KD Standard : 1200 w PEP nominal
600 w DC key down
3KD Classic : 1500 w PEP nominal
1000 w DC key down

GAIN : 2KD Standard : 10 times input - nominal
3KD Classic : 15-20 times input - nominal

DRIVE POWER : 100 watts nominal, 150 watts maximum

TUBE COMPLEMENT: 2KD Standard: 1 x 3-500Z
3KD Classic : 1 x 3CX1200D7.

DUTY CYCLE : Continuous duty at rated output.

DIMENSIONS: 2KD Standard: 9.5"H x 17.5" W x 14" D.
3KD Classic: 9.5" H x 17.5" W x 16" D.

WEIGHT : 2KD Standard: 70 lbs. 3KD Classic : 75 lbs.

COOLING : Forced air cooling.

POWER REQUIREMENTS: 2KD Standard - 115 or 230 VAC
30 or 15 amps, 50/60 Hz.
3 KD Classic - 230 VAC, 20 amps, 50/60 Hz.

ALC CIRCUIT: An ALC feedback circuit is provided to prevent overdrive from a high power exciter.

OUTPUT IMPEDANCE: 50 ohms unbalanced.

INPUT IMPEDANCE : Tuned input circuits are used to insure a 50 ohm input impedance at amateur bands. The impedance may vary between standard bands.

NOISE LEVEL: 40 dB down or better below one tone carrier at 1000 watts output.

HARMONIC AND SPURIOUS RADIATION: Better than 50 dB down on harmonics. 3rd order IMD 35 dB down at full output.

FREQUENCY RANGE:

80 meters - 3.5 to 4.0 Mhz.
40 meters - 7.0 to 7.5 Mhz.
20 meters - 14.0 to 14.5 Mhz
15 meters - 21.0 to 21.5 Mhz.
*10 meters - 28.0 to 30.0 Mhz.

* Note: Operation above 24 Mhz. is limited on amplifiers sold in the U.S.A.

NOTE: These amplifiers will operate on any MARS or WARC frequency between 3.5 and 30 MHz

METERING : A front panel meter to monitor plate voltage, plate current, and grid drive.

CONTROLS : Band selector, LOAD control, TUNE control, meter switch, standby switch, circuit breaker ON/OFF

REAR PANEL CONNECTIONS : RF input (BNC), RF output (UHF), ALC jack and Relay jack (RCA).

RELAY KEYING: A built-in 12 VDC power supply is used to key the antenna relay when the relay jack is shorted to ground.

PROTECTIVE DEVICES: High voltage shorting switch, primary fuses, primary circuit breaker, and cathode fuse.

PLATE VOLTAGE : (Nominal) 3800 to 4000 VDC.

RACK MOUNT: Kit available.

OTHER FEATURES:

Conservative power supply components for superb dynamic regulation in the high voltage supply.

All aluminium cabinets with double shielding in the RF areas to minimize cabinet radiation.

Pi-L plate circuit with silver plated tank coil to insure the cleanest most efficient output.

Backed by a 25 year history of the most reliable equipment available for the amateur market.

HENRY RADIO

2050 S. Bundy Dr. Los Angeles, CA 90025
(213) 820 - 1234

2KD-CLASSIC SPECIFICATIONS

TYPE AND FUNCTION OF EQUIPMENT - The 2KD-Classic is a 2000 watt PEP input (1200 watt PEP nominal output RF linear amplifier covering the 3.5 to 30.0 MHz frequency range.

TYPE OF EMISSION - SSB, AM, CW, FM, RTTY

GAIN - Approximately 10 dB.

LINEARITY - Class AB operation.

OUTPUT POWER - 1200 watts PEP nominal

DRIVE POWER - 80 to 120 watts nominal.

DIMENSIONS - 9.5" high x 17.25" wide x 19.75" deep.

SHIPPING WEIGHT - Approximately 80 pounds.

DUTY CYCLE - Full output in intermittent amateur service.

POWER REQUIREMENTS - 115 VAC, 30 amps, 50/60 Hz.
or 230 VAC, 15 amps, 50/60 Hz.
Single phase, 3 wire system.

ALC CIRCUIT - Prevents overdrive from high power exciters, also boosts average talk power.

TUBE COMPLEMENT - Two Eimac 3-500Z glass envelope triodes operating in a grounded grid circuit.

TUBE COOLING - Forced air.

ANTENNA RELAY - DC relay system for hum-free operation, requires a shorting contact to ground during transmit to key the amplifier into transmit.

TANK CIRCUIT - Pi-L plate circuit with a rotary silver plated tank coil for greatest efficiency and maximum attenuation of unwanted harmonics.

INPUT CIRCUIT - Cathode Pi input matching circuits for maximum drive and linearity and minimum SWR.

POWER SUPPLY - Conservative power supply with solid state rectifiers for reliable, long term operation.

FREQUENCY RANGE -

80 meters	3.5 to 4.0 MHz
40 meters	7.0 to 7.5 MHz
20 meters	14.0 to 14.5 MHz
15 meters	21.0 to 21.5 MHz
*10 meters	28.0 to 30.0 MHz

*10 meters available on export models only. Amplifier will operate on all WARC bands and most frequencies between 3.5 and 30 MHz.

INPUT POWER - Full legal input in all modes.
2000 watts PEP input for SSB.
1000 watts DC input for CW, RTTY, and AM.

OUTPUT IMPEDANCE - 50 ohms unbalanced with SWR not to exceed 2:1.

INPUT IMPEDANCE - 50 ohms nominal.

HARMONIC AND OTHER SPURIOUS RADIATION Second harmonic, down 40 dB or better. Third order distortion, better than 30 dB down at full power output.

NOISE LEVEL - 40 dB or better below one tone carrier at 1000 watts output

PLATE VOLTAGE - 3000 VDC (SSB) and 2000 VDC (CW) nominal plate voltage.

PROTECTIVE DEVICES AC mains circuit breaker, cathode fuse, low voltage fuse, high voltage cabinet shorting switch.

FRONT PANEL CONTROLS - On/Off power switch (circuit breaker, multimeter/mode switch, multimeter, plate current meter, SSB/CW switch, band switch, tune control, load control, standby light, power light.

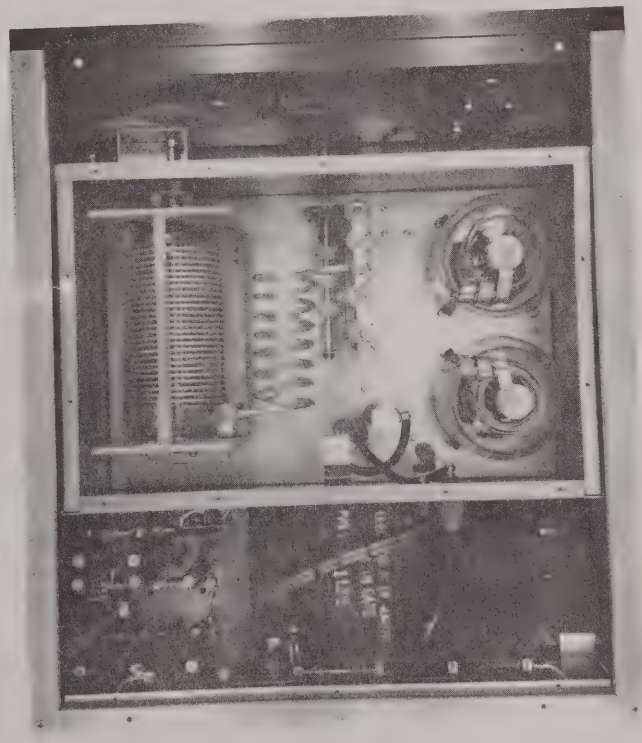
REAR PANEL CONTROLS - ALC jack, ALC adjust potentiometer, relay control jack, BNC RF input connector, UHF type RF output connector, ground lug, 1.5 amp low voltage fuse, cathode fuse, 115/230 VAC terminal board, 10' power cord with no power plug.

ACCESSORIES SUPPLIED - Drive cable, ALC cable, relay cable and manual.

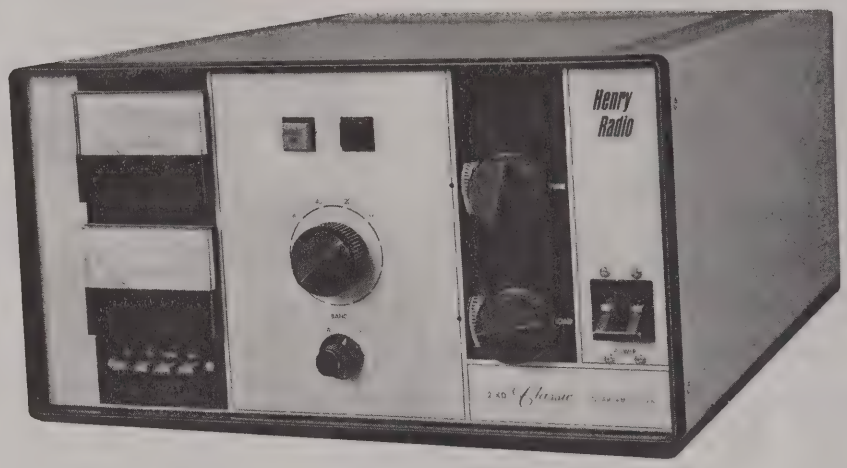
METERING - 0 to 4000 VDC plate voltage, 0 to 400 ma grid current, 0 to 1 ampere plate current.

CABINET - All aluminum cabinet to eliminate magnetic resonance and double shielded to prevent RF interference.

COLOR - Light grey wraparound, black trim, brushed aluminum front panel.



HENRY RADIO



FEATURE FOR FEATURE WE INVITE YOU TO COMPARE OUR HF BAND LINEAR AMPLIFIER WITH ANY OTHER DESK MODEL AMPLIFIER ON THE MARKET!

HENRY 2KD-CLASSIC

We feel that the Henry 2KD-Classic is the finest desk model linear amplifier commercially available today! Its circuit features include a pair of rugged, reliable Eimac 3-500Z glass envelope triodes operating in a grounded grid circuit. The amplifier uses a Pi-L tank circuit to insure maximum suppression of unwanted harmonic outputs in accordance with the amateur industry's standards. The silver-plated rotary tank coil creates a reliable, simple, and economical circuit which is easy to operate.

The 2KD-Classic employs a conservative, heavy duty power supply for true linear output. Two solid state high voltage rectifiers, rated at 15,000 volts, 1.2 amps each are used and the power transformer is tapped for either 115 or 230 VAC operation. The double shielded aluminum cabinet prevents unwanted radiated interference at a minimum weight.

Our amplifier is rated at full legal amateur output for all modes in intermittent amateur service. It has 2000 watts input for SSB and 1000 watts input for CW and RTTY. AM is nominal. Drive requirements are about 100 watts input for a full 1000 watts output for SSB operation. Features include full metering, circuit breaker protection on the AC lines, and a built-in heavy duty antenna relay.

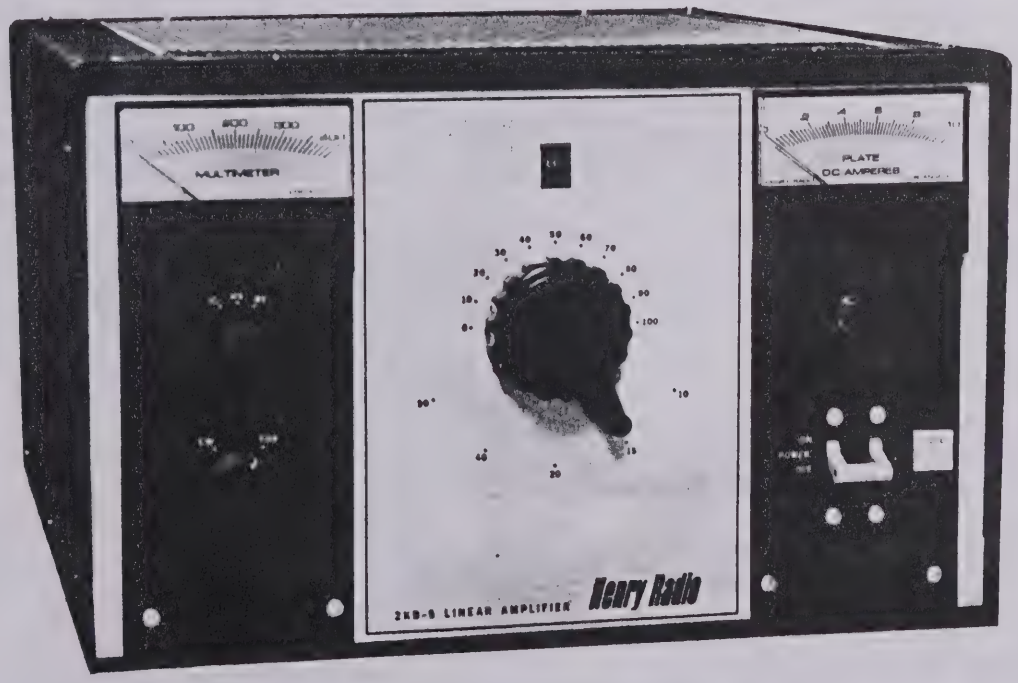
Special high reliability, quick action antenna relays allow semi-break-in CW operation. The built-in DC relay circuit assures hum-free operation. Each unit is supplied with an instruction manual, relay control cable, ALC cable, and an RF drive cable. Either 115 or 230 VAC can be chosen by jumpering a rear panel terminal board. The ALC circuit can be adjusted to prevent overdrive from high power exciters. The tuned input circuits assure proper operation with solid state exciters.

The 2KD-Classic will put your signal on the air with the kind of strength and clarity traditional with Henry linear amplifiers. It will continue to perform at peak efficiency years after you have forgotten its low purchase price. This amplifier is the only full-power desktop model linear on the market backed by Henry Radio's 50 year history of customer service before and after the sale.

2050 S. BUNDY DRIVE LOS ANGELES, CA 90025 USA (213) 820-1234 Telex: 67-3625 (Henradio)

OPERATING AND MAINTENCE MANUAL

HENRY 2KD-5



Henry Radio 11240 West Olympic Boulevard Los Angeles, California 90064

HENRY 2KD-5 RF LINEAR POWER AMPLIFIER SPECIFICATIONS

GENERAL INFORMATION	Type and Function of Equipment:	The 2KD-5 is a 2000 watt PEP input (1200 watt PEP nominal output) RF linear amplifier, covering the 80, 40, 20, 15, and 10 meter amateur bands.
	Tube Complement:	Two Eimac 3-500Z glass envelope triodes operating in a grounded grid circuit.
	Duty Cycle:	Full output in intermittent amateur service
	Tube Cooling:	Forced air.
	ALC Circuit:	ALC circuit to prevent overdrive from high power exciters, also boosts average talk power.
	Type of Emission:	SSB, CW, RTTY, or AM.
	Antenna Relay:	DC relay system for hum-free operation, requires shorting contact to ground during transmit to key amplifier into transmit.
	Power Output Indicator:	Self-contained relative RF power meter.
	Tank Circuit:	Pi-L plate circuit with a rotary silver plated tank coil for greatest efficiency and maximum attenuation of unwanted harmonics.
	Input Circuits:	Cathode Pi input matching circuits for maximum drive and linearity.
	Power Supply:	Conservative power supply with solid state rectifiers for reliable, long term operation.
RF DATA	Frequency Range:	80 meters 3.5 to 4.0 MHz 40 meters 7.0 to 7.5 MHz 20 meters 14.0 to 14.5 MHz 15 meters 21.0 to 21.5 MHz 10 meters 28.0 to 30.0 MHz*
	Input Power:	Full legal input in all modes. 2000 watts PEP input for SSB. 1000 watts DC input for CW, RTTY, and AM.
	Output Power:	1200 watts PEP nominal - SSB 600 watts DC nominal - CW and RTTY 350 watts nominal - AM.
	Drive Power:	80 to 150 watts nominal, 100 watts for full output.
	Output Impedance:	52 ohms unbalanced with SWR not to exceed 2:1.
	Input Impedance:	52 ohms nominal.
	Harmonic and Spurious Radiation:	Second Harmonic - —40 db nominal Third Order Distortion - better than —30 db at full power output.
	Noise Level:	—40 db or better below one tone carrier at 1 KW.
ELECTRICAL DATA	Line Voltage:	Jumper for 115 or 230 VAC, 3 wire single phase.
	Current Requirements:	15 amps (230 VAC) or 30 amps (115 VAC).
	Plate Voltage:	3000 VDC (SSB) and 2000 VDC (CW) nominal.
	Protective Devices:	AC Mains circuit breaker, Cathode Fuse, Low Voltage fuse, High Voltage Cabinet Shorting Bar.
PHYSICAL DESCRIPTION	Dimensions:	10.5" high x 15" wide x 17.5" deep.
	Weight:	62 pounds.
	Shipping Weight:	70 pounds.
	Front Panel Controls:	On/Off Power Switch (Circuit Breaker), Multimeter, Multimeter Switch, SSB/CW Switch, Triconcentric Tune/Load/Band Control, Plate Current Meter, Pilot Light, and Cathode Fuse.
	Rear Panel Controls:	ALC Jack, ALC Adjust Potentiometer, Relay Control Jack, BNC RF Input Connector, UHF RF Output Connector, Ground Lug, 1.5 Amp Low Voltage Fuse, 115/230 Terminal Board, 10' 3-wire Power Cord with no power plug.
	Accessories Supplied:	Drive Cable, ALC Cable, Relay Cable, Manual.
	Metering:	Relative RF Output, 0 to 4000 VDC Plate Voltage, 0 to 400 ma Grid Current, 0 to 1 amp Plate Current.
	Cabinet:	All aluminum cabinet to eliminate magnetic resonance and double shielded to prevent RF interference.
	Color:	Light grey wraparound, black trim, brushed aluminum front panel.
	Manufacturer:	HENRY ELECTRONICS, Inc. 11240 West Olympic Blvd Los Angeles, California 90064

*Ten meter band coverage only available in units for Military, Commercial or Export. Not available for domestic use in the United States.

HENRY 2KD-5 OPERATING AND MAINTENANCE MANUAL

SECTION 1 INTRODUCTION

The 2KD-5 amplifier is a high-quality one-stage linear amplifier using two rugged, proven glass-envelope Eimac 3-500Z triodes operating in a grounded grid circuit. The equipment is completely self-contained, a table top, 2000 watt PEP input amplifier using only the highest quality components available. In the tradition of Henry amplifiers, the 2KD-5 is designed for complete linearity, and conservative operation, resulting in clean signals with no RF interference. The amplifier is designed for SSB, CW, RTTY, or AM operation on the amateur bands between 3.5 and 30 MHz. The amplifier can be factory modified for frequencies outside the amateur bands for commercial or military operation. The 2KD-5 comes factory wired for operation from a 230 VAC line but may easily be rewired for 115 VAC operation. Please read the operating instructions to familiarize yourself with the unit before attempting operation.

> CAUTION: There are dangerously high voltages present inside the amplifier whenever the power swith is in the ON position. Do not remove the top cover without exercising the utmost caution!

SECTION 2 INSTALLATION

Section 2.1 UNPACKING

Remove the amplifier from its shipping carton and packing material and examine it carefully for visible damage. If the linear has been damaged in shipment, save the box and packing material and notify the transportation company immediately. It is a good idea to save the box in any case because the box is expensive to replace and will be useful in protecting the 2KD-5 should you ever decide to ship or move it to another location. The amplifier is shipped without the two tubes installed. Before operation, you must install the 3-500Z tubes as described in Section 2.3.

The following accessories should be included with the amplifier:

1	Instruction Manual	2	Shielded Control Cables
1	Warranty Card	5	3 AG, 1.5 Amp Fuses
1	PL-259 Coax Connector	5	8 AG, 1.5 Amp Fuses
1	RF Input Cable (RG-58)		

Section 2.2 OPERATING LOCATION

The amplifier may be located wherever desired provided there is adequate air flow from the bottom of the unit up through the top. Do not enclose the amplifier or restrict the airflow. You will also require a location that has an appropriate power source. An operating location which avoids environmental extremes of heat, humidity, and dust will keep the amplifier new looking and guaranty years of reliable operation.

Section 2.3 INSTALLATION OF TUBES

Remove the perforated top cover of the amplifier and the interior top shield, giving access to the interior of the RF section of the amplifier.

Put the two 3-500Z tubes in their sockets. Install the rear tube so that the screw which holds the plate strap is towards the front of the amplifier. Install the front tube so that the screw is towards the back of the amplifier. Be careful not to put any strain on the glass portion of the tubes. They are easily damaged. Fasten each plate lead to its appropriate anode connector. Remove the screw in the top of each anode connector on top of the tube and flex the parasitic choke and plate lead until the mounting hole in the plate is positioned directly above the screw hole in the anode connector. Insert the screw and hold the plate lead firmly while tightening the screw.

> CAUTION: Do not exert too great a pressure or twist on the anode connector. Excessive pressure can cause a hairline fracture in the tube's glass envelope, destroying the tube. The tube's pins are also particulary delicate, and can easily break if the tube is not inserted and removed very carefully.

Replace the top shield but leave the outside cover off until the amplifier has been connected and tested. Be certain that the high voltage shorting strap on the RF section is not shorting after the top shield has been replaced.

Section 2.4 CABLING

NOTE: Later 2KD-5's have a 4 wire power cable. See the schematic on page 14 for wiring instructions.

All of the following cables must be connnected before operation of the amplifier.

POWER CABLE - The 2KD-5 comes from the factory wired for operation from a 230 VAC, single-phase, 60 Hz power source. The green wire in the power cord is the ground wire and must be connected to the neutral pin of the plug that you select for connection into the power line. The black and white wires must be connected to the other two pins for 230 VAC operation. Because there are several types of 230 VAC outlet sockets, a power plug has not been included with the amplifier. For 115 VAC operation, it is only necessary to change the jumper connections on the terminal strip behind the small door on the rear panel of the amplifier. Figure 1 shows the jumper connections for 115 and 230 VAC. Be sure that the jumpers are clear of the cover when the adjustment is complete to avoid any possiblility of shorting the AC line to ground.

> CAUTION: The amplifier will be damaged if the green wire is connected incorrectly. Be certain to disconnect the power cord from the AC line before changing the jumper terminals.

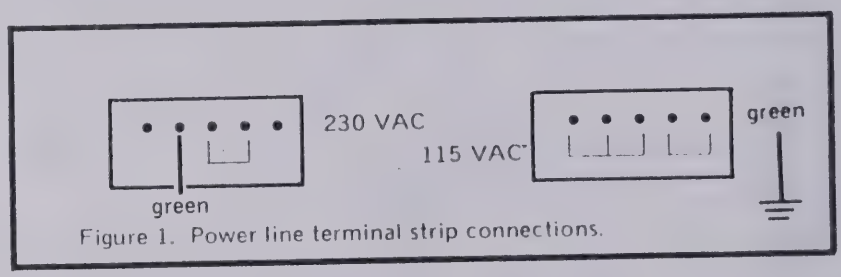


Figure 1. Power line terminal strip connections.

ANTENNA COAX - Use only RG-8/U coax (or its equivalent) to connect the 2KD-5 to the antenna. A PL-259, UHF type, coax connector is included in the accessory kit. Prepare the cable and connector as described in Figure 2. The PL-259 mates with the jack marked OUTPUT on the rear panel of the amplifier.

> CAUTION: Do not operate the amplifier without a load or into a load with an SWR greater than 2:1. Measure the antenna's SWR with an SWR meter, using only the exciter, before operating the amplifier. With the 2KD-5 turned off, the exciter's output will pass through the amplifier directly to the antenna.

DRIVE CABLE - The RG-58A/U drive cable connects to the INPUT connector on the rear panel of the amplifier. This connector is the BNC jack. The other end of the cable is terminated by a PL-259 plug and should be inserted into the RF output connector of the exciter. An adapter may have to be used if the exciter does not have a matching socket.

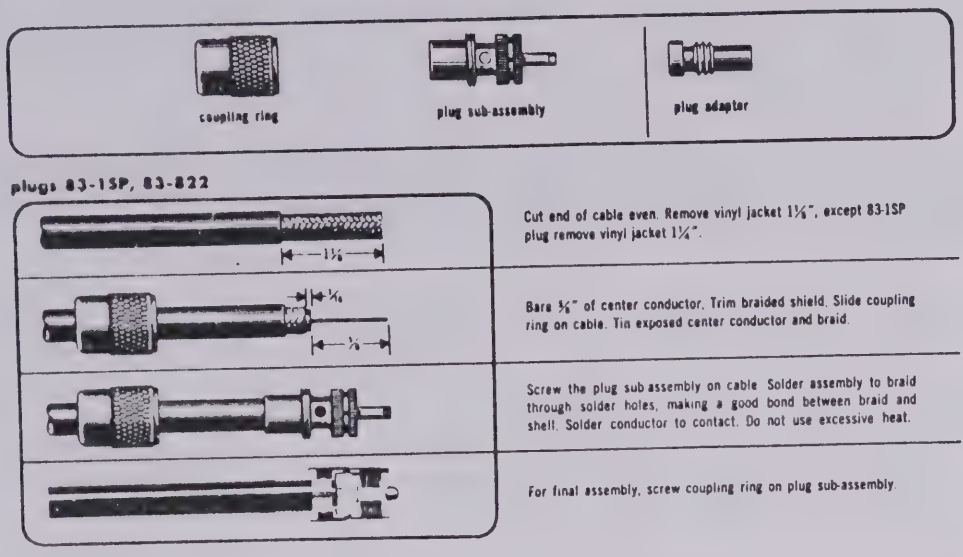


FIGURE 2. Assembly Instructions for a PL-259 Coax Connector.

ALC (Automatic Level Control) CABLE - Plug the gray ALC cable into the ALC OUT phono socket on the rear panel of the amplifier and into the ALC feedback connection on the exciter. If the exciter does not have provision for feedback of ALC voltage from the amplifier, simply ignore the amplifier's ALC socket and cable.

RELAY CABLE - The gray relay control cable should be plugged into the RCA phono socket marked RELAY CONTROL on the rear panel of the amplifier. This cable conducts the keying signal from the exciter to switch the amplifier to the transmit condition and should be plugged into the socket or connector marked antenna relay (or its equivalent) on the exciter. The exciter needs supply only a shorting relay contact (closed during transmit) to key the amplifier.

> CAUTION: Do not apply any voltage to the RELAY CONTROL jack. The internal relay is activated by a self-contained power supply.

When the 2KD-5 is driven by an exciter without an antenna relay socket it may be necessary to examine the circuit diagram of the exciter to find an available unused relay contact that is normally open in the receive condition. All current transmitters and receivers designed for amateur operation have a relay contact at a terminal board or connector on the rear panel.

SECTION 3 OPERATING CONTROLS

Section 3.1 FRONT PANEL CONTROLS

OFF/ON POWER SWITCH - This switch is used for turning the amplifier on and off. It is also a circuit breaker for overload protection on the AC lines. When the 2KD-5 is turned off, the output of the exciter passes through the amplifier directly to the antenna.

MULTIMETER SWITCH - This 3-position rotary switch selects the function of the MULTIMETER as described below.

IG - With the switch in this position the meter monitors the amplifier's grid current. The full scale meter reading in this position is 400 ma DC. The nominal grid current during operation is approximately 100 to 125 ma.

HV - With the switch in this position, the meter monitors the amplifier's plate voltage. The full scale reading in this position is 4000 VDC. Normal plate voltage with the amplifier in stand-by (unkeyed) is about 3000 VDC for SSB operation and 2000 VDC for CW operation. Line voltage variations will cause corresponding variations in the plate voltage.

RF - With the switch in this position the meter monitors the relative RF output power of the amplifier. A full scale reading is about 1200 watts PEP output for SSB operation.

CW/SSB SWITCH - This 2-position rotary switch selects between two plate voltages to assure correct loading and output for each type of emission.

PLATE METER - This meter monitors the plate current of the 3-500Z tubes. Nominal plate current is between 650 and 800 ma for full output.

PILOT LIGHT - When the amplifier is turned on, the pilot light will come on indicating that the POWER switch is on.

CATHODE FUSE - This 8 AG, 1.5 amp fuse is the cathode fuse. Never use a higher amperage fuse than the one specified.

TRI-CONCENTRIC TUNE/LOAD/BAND CONTROL - This three function control has the three major operating controls as described below.

LOAD CONTROL - This control matches the amplifier's output network to the load. Refer to the calibration table for approximate initial settings for the frequency range desired. A LOAD setting of 0 corresponds to minimum loading and a LOAD setting of 100 corresponds to maximum load capacitor mesh.

TUNE CONTROL - The TUNE control is a 20-turn vernier dial connected to the variable inductance tank coil. The TUNE control reading can be used in conjunction with the setting given in the calibration table to adjust the tank coil for the approximate tuning range to be used. A vernier setting at maximum clockwise rotation (19.9) corresponds to the minimum tank coil inductance and the highest tank circuit frequency.

BAND SWITCH - The BAND switch selects the necessary input and output circuits for the amplifier to operate in any one of the following frequency ranges:

80	3.500 to 4.000 MHz
40	7.000 to 7.500 MHz
20	14.000 to 14.500 MHz
15	21.000 to 21.500 MHz
10	28.000 to 30.000 MHz (Export and military sales only)

The amplifier can be operated on many frequencies outside these bands by switching the amplifier to the band closest in frequency to the desired operating frequency. Never move the BAND switch when the amplifier is keyed.

Section 3.2 REAR PANEL CONTROLS

ALC JACK - This socket accepts an RCA phono plug (an ALC cable is provided in the accessory packet of the amplifier). The ALC feedback to the exciter is available at this socket.

ALC ADJUST POTENTIOMETER - This potentiometer controls the sensitivity of the 2KD-5's ALC circuit. Refer to the operating instructions for the adjustment procedure

RELAY CONTROL JACK - The RELAY CONTROL jack accepts an RCA phono plug (a relay cable is provided in the accessory packet of the amplifier). When the socket is shorted to ground the amplifier's antenna relay closes. If the amplifier is turned off the relay will not key. Never apply any voltage to this socket.

RF INPUT CONNECTOR - This BNC coax connector accepts the drive line from the exciter. The input impedance of the amplifier is 50 ohms.

RF OUTPUT CONNECTOR - The nominal output impedance of the amplifier is 50 ohms. Do not operate the equipment without a load, or into a load with an SWR of more than 2:1. Use only RG-8/U coax (or its equivalent) to connect this SO-239 connector to an appropriate antenna or dummy load.

GROUND LUG - This lug is provided to ground the amplifier. Connecting the amplifier to a standard 3 pin electrical system is usually adequate grounding. If such a system is not used it is wise to ground the unit using the ground lug and connecting to a good earth ground to prevent radiated interference or the danger of electrical shocks.

LOW VOLTAGE FUSE - This 3 AG, 1.5 amp fuse protects the low voltage relay circuit from shorts. Never exceed the recommended current rating when replacing the fuse.

AC POWER CONNECTOR TERMINAL BOARD - This terminal board is used to adjust the power transformer taps for 110 or 220 VAC operation. Figure 1 describes the necessary jumpers for each type of operation.

POWER CORD - The power cord must be connected to an appropriate power source. No power plug is provided. Be certain that the power transformer is jumpered correctly for the appropriate line voltage.

SECTION 4 OPERATION

Section 4.1 PRELIMINARY SETTINGS

Set the band switch to the desired band. With the amplifier turned off, tune your exciter to the desired operating frequency, and then turn the exciter's drive to zero. Set the TUNE and LOAD controls to the calibration readings recommended in the calibration table for the desired operating band. With the amplifier off, its internal relay automatically connects the exciter directly to the antenna transmission drive.

Turn the 2KD-5 on by switching the circuit breaker to the ON position. The dial lights and pilot light should be lighted and the blower should be operating. Look down through the top shield to verify that the filaments of the 3-500Z tubes are lighted and place your hand directly above each tube to make certain air is circulating in the cooling system. The 3-500Z tubes require no warm-up period.

Set the multimeter switch to the HV position. The multimeter should read between 280 and 320, indicating a plate voltage of 2800 to 3200 VDC. With normal line voltage and no RF drive applied, the plate meter should show a resting current between 150 and 200 ma.

NOTE: the 3-500Z tubes should show color, glowing a dull cherry red with 400 ma of plate current, and possibly a bright orange at 800 ma. When so operated, the tubes are well within their rated operating limits and no damage will result, provided the plate current has been dipped to a minimum reading using the TUNE control. Do not operate the tubes with 800 ma current in an off resonance condition, and do not operate the tubes with 400 ma for long periods of time in an off resonance condition. Depending on the line voltage, the plate current will be between 650 and 800 ma for 1000 watts output.

Section 4.2 SSB OPERATION

Set the CW/SSB switch to CW and the multimeter switch to RF. With the exciter adjusted for zero output, press the PTT switch of the exciter, causing the exciter and the 2KD-5 to be keyed into the transmit mode. The amplifier's plate current meter should show a resting plate current between 150 and 200 ma. Increase the RF output of the exciter until the amplifier's plate current is about 400 ma. Adjust the TUNE control for maximum RF output as indicated on the multimeter. Turn the multimeter switch to IG and adjust the exciter's drive for an amplifier grid current between 260 and 270 ma.

Step 1 If the plate current is less than 600 ma, increase the loading of the amplifier slightly by moving the LOAD control to a higher number. If the plate current is more than 600 ma decrease the loading by moving the LOAD control to a lower number.

Step 2 Adjust the amplifier for a minimum plate current reading using the TUNE control.

Step 3 Adjust the exciter's drive for a grid current reading between 260 and 270 ma.

Repeat steps 1 through 3 until the following operating parameters are reached:

IG - 260 to 270 ma
IP - 600 ma
TUNE - TUNE control adjusted for minimum plate current.

Release the PTT switch of the exciter to allow the exciter and amplifier to go into the standby mode and turn the SSB/CW switch to the SSB position. Key the exciter and adjust it for an grid current reading between 260 and 270 ma on the amplifier. The plate current should be approximately 800 ma. If it is not, readjust the TUNE and LOAD controls.

Place the exciter into the SSB mode and adjust the exciter's microphone gain control for voice peak readings of about 400 ma on the amplifier's plate current meter. The grid current will peak between 50 and 100 ma. Check for proper drive with a monitor scope if one is available.

Section 4.3 CW OPERATION

Set the CW/SSB switch to CW and tune the amplifier as described in Section 4.2 substituting the following operating parameters:

IG - 250 to 270 ma
IP - 500 to 550 ma

The above plate current readings described in Section 4.2 and 4.3 apply for operation from a 230 VAC primary supply. For operation from a 115 VAC source, the plate current may have to be reduced because of poorer voltage regulation.

Section 4.4 ALC ADJUSTMENT

The amplifier is shipped with the ALC ADJUST potentiometer fully counter-clockwise (off). If the ALC feedback feature is not desired, just leave the potentiometer as it comes from the factory. If ALC feedback is used, the adjustment need be made only once unless a new exciter is used. After the ALC adjustment is made, use the locknut on the potentiometer shaft to lock the control in place.

With the ALC ADJUST control fully counter-clockwise, tune the amplifier for SSB operation. Drive the amplifier to about 800 ma. of plate current and then rotate the ALC ADJUST control clockwise until the grid current just begins to decrease. If the exciter connot drive the 2KD-5 to 800 ma. of plate current, leave the ALC ADJUST potentiometer in the fully counter-clockwise position.

The ALC circuit will prevent overdrive from high powered exciters when it is adjusted properly. For the cleanest, sharpest signals, avoid driving the plate current above 400 ma. on voice peaks.

Section 4.5 ALTERNATE TUNING METHOD

When the TUNE and LOAD dial calibrations have been verified for each band, and the operator feels comfortable with the amplifier, the entire tuning procedure can be completed in a few seconds.

This alternate method (tuning for maximum output) is done by applying RF drive from the exciter to the amplifier, and then bringing the RF reading of the multimeter up to about two-thirds of full scale. Then adjust the TUNE and LOAD controls to peak the amplifier output reading as indicated on the multimeter. The amplifier will now be tuned to resonance for proper operation.

SECTION 5. MAINTENANCE

Section 5.1 PANEL METER CALIBRATION

Remove the top covers of the amplifier. Pull the shorting plug from the grid meter test point which is located on the small panel on the front of the RF section behind the front panel. Connect an external meter with a full scale reading of 500 or 1000 ma to the test point with the positive termanal on the center pin.

Operate the amplifier in a normal manner, loaded to the antenna or a dummy load. Adjust the grid meter potentiometer (the one nearest the test point) until the amplifier meter reads the same value as the test meter. After removing the test meter, reinstall the shorting plug.

Remove the high voltage lead from the back of the RF deck and connect a 1000 ma test meter in series with the lead. CAUTION: THE HIGH VOLTAGE IS LETHAL. EXERCISE EXTREME CAUTION! Operate the amplifier and the adjust the plate meter potentiometer (the one nearest the plate meter) until the amplifier's meter and the test meter read the same value. Turn the amplifier off and allow several minutes for the voltage to bleed off. Reconnect the HV lead.

Connect a 5000 VDC voltmeter from one of the tube caps to chassis ground. CAUTION: THE HIGH VOLTAGE IS LETHAL. EXERCISE EXTREME CAUTION! Turn the amplifier on, but do not drive it. Allow a minute for warm up time. Adjust the center potentiometer until the amplifiers high voltage reading matches the test meter. Turn off the power and allow the high voltage to bleed off. Remove the test meter and replace the top covers.

TABLE 1. TROUBLESHOOTING

PROBLEM	CAUSE	REPAIR
The amplifier does not come on when the selector switch is turned on.	Improperly Connected AC line. The fuse is blown. The overload relay is shorted. The power switch is not closing. The interlock switch is open.	Reconnect the line properly. Replace the fuse. Check the Relay with an ohm-meter. Check it with an ohm meter. Check it with an ohm meter.
The amplifier turns on as soon as the cable is plugged in and will not turn off.	The switch is shorted or inoperative.	Replace the switch.
There is no high voltage indication on the multimeter.	The meter circuit is inoperative.	Check the circuit for malfunction.
No plate current indicated when the amplifier is on and the exciter is transmitting with no RF Drive applied.	The relay control cable from the exciter to the 2KD-5 may be bad. RY may not be operating. If the exciter operates RY, suspect a poor contact by the center pole of the relay.	Check the cable's continuity. Check for component malfunction. Burnish it and bend the relay center arm slightly to increase the closed pressure.
The plate meter shows current as soon as the high voltage is turned on and the exciter is not transmitting.	RY is probably actuating, showing a resting current of 150-100ma on the plate meter, caused by a short in the relay control circuit. If RY is not actuated, suspect a grid-filament short in one tube.	Unplug the relay control cable, if RY stays actuated the trouble is not in the exciter. Check the relay circuit. Replace the tube.
Excessive plate current.	Bad tube or bad R18. If one tube fails, it must be replaced before the 2KD-5 will operate. The filaments are operated in series, resulting in a total filament supply of 10 volts at 15 amps, dividing to 5 volts at 15 amps at each tube.	Replace the tube. Replace R18.
The 2KD-5 operates normally but no plate current shows.	Bad meter circuit.	Check the meter circuit for any malfunction.
An arc indicates a high voltage short: Unplug the high voltage plug fron the RF deck and exciter. If the short persists it is located in the power supply.	A power supply high voltage short.	Check for visible evidence, an arc usually chars or blackens an area. Make an ohm meter check. Start with the filter condenser and check through the circuit toward the power transformer. Check interconnecting leads for a ground short. Check the reverse resistance of D1-D2. When disconnected, good diodes have infinite resistance and bad diodes read less than 2 ohms resistance in either direction.
If the short is in the RF deck.	An RF deck high voltage short.	Check for visible evidence. Make an ohm meter check. Check the high voltage leads.
The circuit breaker is actuated by a short.	Shorted power transformer primary. A shorted rectifier diode.	Check for a short and replace. Check with an ohm meter as above and replace.
No plate current and excessive grid current.	Open high voltage circuit.	Examine the circuit and repair.
No grid current and the plate meter does not drive up.	Exciter malfunction.	Turn the 2KD-5 off, switch to FWD PWR, operate exciter to antenna and check its operation.
Intermittant grid current.	Cable between exciter and 2KD-5 bad. Bad socket connection in that cable. Bad input module.	Check cable continuity. Repair the socket connection. Operate on a different band to isolate the problem.
Low grid current.	Low output from the exciter.	Check the exciter output.

HENRY 2KD-5 PARTS LIST

SCHEMATIC NO.	DESCRIPTION	MANUFACTURER OR EQUIVALENT
B1	BLOWER: 110 VAC.	Howard 3-90-8506
.01	CAPACITOR: Ceramic Disc, .01 mf, 600 Volt.	Centralab DD6-103
C1-C8	CAPACITOR: Electrolytic, 190 mf, 450 VDC.	CDE FAH 190-450A3
C9	CAPACITOR: Electrolytic, 500 mf, 25 VDC.	Arco MEJ-500
C10, C11	CAPACITOR: Ceramic disc, .001 mf, 6KV.	Centralab DD60-102
C12	CAPACITOR: Ceramic disc, .0047 mf, 6KV.	Sprague 60GA-D47
C13, C14	CAPACITOR: Ceramic transmitting, 1000 pf, 5,000 VDC.	Centralab 858S-1000
C15, C16	CAPACITOR: Ceramic transmitting, 25 pf, 5,000 VDC.	Centralab 850S-25Z
C17, C18, C19	CAPACITOR: Ceramic transmitting, 75 pf, 5,000 VDC.	Centralab 850S-75N
C20A	CAPACITOR: Ceramic transmitting, 300 pf, 5,000 VDC, bank of 3 capacitors.	Centralab 858S-100x3
C20B	CAPACITOR: Ceramic transmitting, 300 pf, 5000 VDC, bank of 5 capacitors.	Centralab 858S-100x3
C21	CAPACITOR: Variable, air, 19 to 488 pf, 2 KV,	All Star 73-1-45-45
C22	CAPACITOR: Mica, 220 pf, 500 VDC.	Arco DM15-221J
C23, C24	CAPACITOR: Mica, 47 pf, 500 VDC.	Arco DM15-470J
C25, C26	CAPACITOR: Ceramic disc, .1 mf, 1KV.	Centralab CK-104
C27, C28	CAPACITOR: Ceramic disc, .003 mf, 50VDC.	Centralab DD-302
C29 (Delete in U.S.A.)	CAPACITOR: Mica, 82 pf, 500 VDC.	Arco DM15-820J
C30 (Delete in U.S.A.)	CAPACITOR: Mica, 75 pf, 500 VDC.	Arco DM15-750J
C31, C32 (Delete in U.S.A.)	CAPACITOR: Mica, 68 pf, 500 VDC.	Arco DM15-680J
C33, C34	CAPACITOR: Mica, 100 pf, 500 VDC.	Arco DM15-101J
C35, C36	CAPACITOR: Mica, 91 pf, 500 VDC.	Arco DM15-910J
C37-C40	CAPACITOR: Mica, 160 pf, 500 VDC.	Arco DM15-161J
C41	CAPACITOR: Mica, 210 pf, 500 VDC.	Arco DM15-211J
C42,C43	CAPACITOR: Mica, 330 pf, 500 VDC.	Arco DM15-331J
C44, C45	CAPACITOR: Mica, 300 pf, 500 VDC.	Arco DM15-300J
C46	CAPACITOR: Mica, 390 pf, 500 VDC.	Arco DM15-390J
C47 - C49	CAPACITOR: Mica, 470 pf, 500 VDC.	Arco DM15-471J
C50, C51	CAPACITOR: Mica, 820 pf, 500 VDC.	Arco DM15-821J
C52	CAPACITOR: Mica, 620 pf, 500 VDC.	Arco DM15-621J
C53 - C57	CAPACITOR: Ceramic feedthrough, 2,000 pf, 600 VDC.	Erie 202M
CB	CIRCUIT BREAKER: 20 amp.	Wood W68X2Q1-2-20
D1, D2	DIODE: Silicon rectifier, 15 KV, 1.2 amps.	Semtech SDHD-15K
D3	DIODE: Zener, 100 volts, 12 ma., 5 watt.	Motorola HEP-Z2545
D4, D5	DIODE: Rectifier, axial lead, 1,000 PIV, 1 amp.	SCI XCSTN-142
D6	DIODE: Silicon rectifier, axial lead, 200 PIV, 1 amp.	1N453
D7	DIODE: Zener, 10 Volts, 1.2 amps.	Semtech SA-5534
D8 throgh D11	DIODE: Silicon rectifier, axial lead, 1,000 PIV, 1 amp.	GE-509
D12	DIODE: Silicon rectifier, axial lead, 50 PIV, 1 amp.	GE 1N82A
F1	FUSE: 3AG, 1.5 amp, 250 VAC. FUSEHOLDER.	Littelfuse 312-1.5 Littelfuse 342-004
F2	FUSE: 8AG, 1.5 amp, 250 VAC. FUSEHOLDER.	Littelfuse 361-1.5 Littelfuse 348-875
HV	CONNECTOR: High voltage plug and socket.	Millen 37501
J1, J2	CONNECTOR: Filament pin jack and socket.	Smith 101 and 102
J3	CONNECTOR: Grid current test jack.	Switchcraft 3501 FP
J4, J5	CONNECTOR: ALC and relay control, chassis jack, RCA phone type.	Switchcraft 3501FP
J6	CONNECTOR: RF OUT, coax chassis connector, type SO-239, UHF.	Amphenol 83-1R
J7	CONNECTOR: RF IN, coax chassis connector, type UG-209 A/U, BNC.	Amphenol 31-203
L1	INDUCTOR: RF Plate Choke, 106 turns on a teflon rod (20 guage wire).	Henry L1-2KD-5
L2	INDUCTOR: 24 MHz Tank Coil.	Henry L2-2KD-5
L3	INDUCTOR: Tune control, variable,	Henry L3-2KD-5
L4	INDUCTOR: Tank coil.	Icore 1608-22

SCHEMATIC NO.	DESCRIPTION	MANUFACTURER OR EQUIVALENT
L5	INDUCTOR: RF choke, 2.5 mh, 150 ma.	Miller 4555
L6	INDUCTOR: RF choke, 5 turns no. 16 copper wire.	Henry L6-2KD-5
L7 (Delete in U.S.A.)	INDUCTOR: 10 Meter, input coil, 5 turns no. 18 copper wire.	Henry L7-2KD-5
L8	INDUCTOR: 15 Meter input coil, 6 turns no. 18 copper wire.	Henry L8-2KD-5
L9	INDUCTOR: 20 Meter input coil, 8 turns no. 18 copper wire.	Henry L9-2KD-5
L10	INDUCTOR: 40 Meter input coil, 10 turns no 18 copper wire.	Henry L10-2KD-5
L11	INDUCTOR: 80 Meter input coil, 14 turns no. 18 copper wire.	Henry L11-2KD-5
L12	INDUCTOR: RF choke, 2.5 mh, 160 ma.	Miller 6302
L13	INDUCTOR: Filament center tap choke.	Henry L13-2KD-5
L14, L15	INDUCTOR: Parasitic suppressor, copper strap and 2 only 150 ohm resistors.	Henry L14-2KD-5
L16	INDUCTOR: Toroid wound filament choke.	Henry L16-2KD-5
M1	METER: Plate meter, 0-1 amp. scale.	Beede 913104
M2	METER: Multimeter, 0-400 ma. scale.	Beede 913105
P1	CONNECTOR: 11 pin plug.	Amphenol 86CP11
P2	CONNECTOR: 9 pin plug.	Cannon DE-9P
PL1	LIGHT: 6S6 pilot light.	6S6
PL2	LIGHT: Pilot light assembly.	IDI B-1050-C1
R1 through R8	RESISTOR: Wire wound, 20 K ohm, 20 watt, 5%.	Memcore FR20-20K
R9	RESISTOR: Wire wound, 200 ohm, 20 watt, 5%.	Memcore FR20-200
R10	RESISTOR: Wire wound, 22.5 K ohm, 10 watt, 5%.	Memcore FR10-22.5K
R11	RESISTOR: Carbon, 150 ohm, 2 watt, 10%.	Resistor
R12	RESISTOR: Carbon, 10 K ohm, 2 watt, 10%.	Resistor
R13	RESISTOR: Carbon, 1.8 K ohm, ½watt, 10%.	Resistor
R14	RESISTOR: Carbon, 1 K ohm, ½ watt, 5%.	Resistor
R15	RESISTOR: Carbon, 68 K ohm, 1 watt, 10%.	Resistor
R16	RESISTOR: Carbon, 1 K ohm, 1 watt, 10%.	Resistor
R17	RESISTOR: Carbon, 220 ohm, 2 watt, 10%.	Resistor
R18	RESISTOR: Wire wound, 10 K ohm, 10 watt, 5%.	Memcore FR10-10K
R19	RESISTOR; Wire wound, ½ ohm, 10 watt, 5%.	Memcore FR10-0.5
R20	RESISTOR: Carbon, 270 K ohm, 2 watt, 10%.	Resistor
R21	RESISTOR: Wire wound, 2 ohm, 25 watt, 5%.	Memcore FR25-2
RY	RELAY: 3PDT, 12 VDC, 10 amp., antenna relay.	Magnacraft 151X-16
S1	SWITCH: SSB/CW.	Henry S1-2KD-5
S2	SWITCH: High voltage shorting.	Henry S2-2KD-5
S3	SWITCH: Multimeter, 4-position.	Centralab PA-1003
S4A, S4B	SWITCH: Band Switch, input section.	Centralab 2504
S5	SWITCH: Band Switch.	Centralab P-270
S6, S7	SWITCH: Band Switch.	Centralab P-284
SK1	CONNECTOR: 11 pin socket.	Amphenol 78PF11
SK2	CONNECTOR: 9 pin socket.	Cannon DE-9S
T1	TRANSFORMER: Power.	ECA-1120
T2	TRANSFORMER: Relay.	Signal 241-6-24
TB1	TERMINAL BOARD: AC input.	Cinch 5-142
V1, V2	ELECTRON TUBE: 3-500Z high mu power triode.	Eimac 3-500Z
	TUBE SOCKET: 5-pin Ceramic.	Johnson 122-0275
VR1	POTENTIOMETER: ALC adjust, 100 K ohm.	
VR2	POTENTIOMETER: HV Metering adjust, 500 K ohm.	
VR3	POTENTIOMETER: Grid Current metering adjust, 1,000 ohm.	
VR4	POTENTIOMETER: Plate Current metering adjust, 1,000 ohm.	

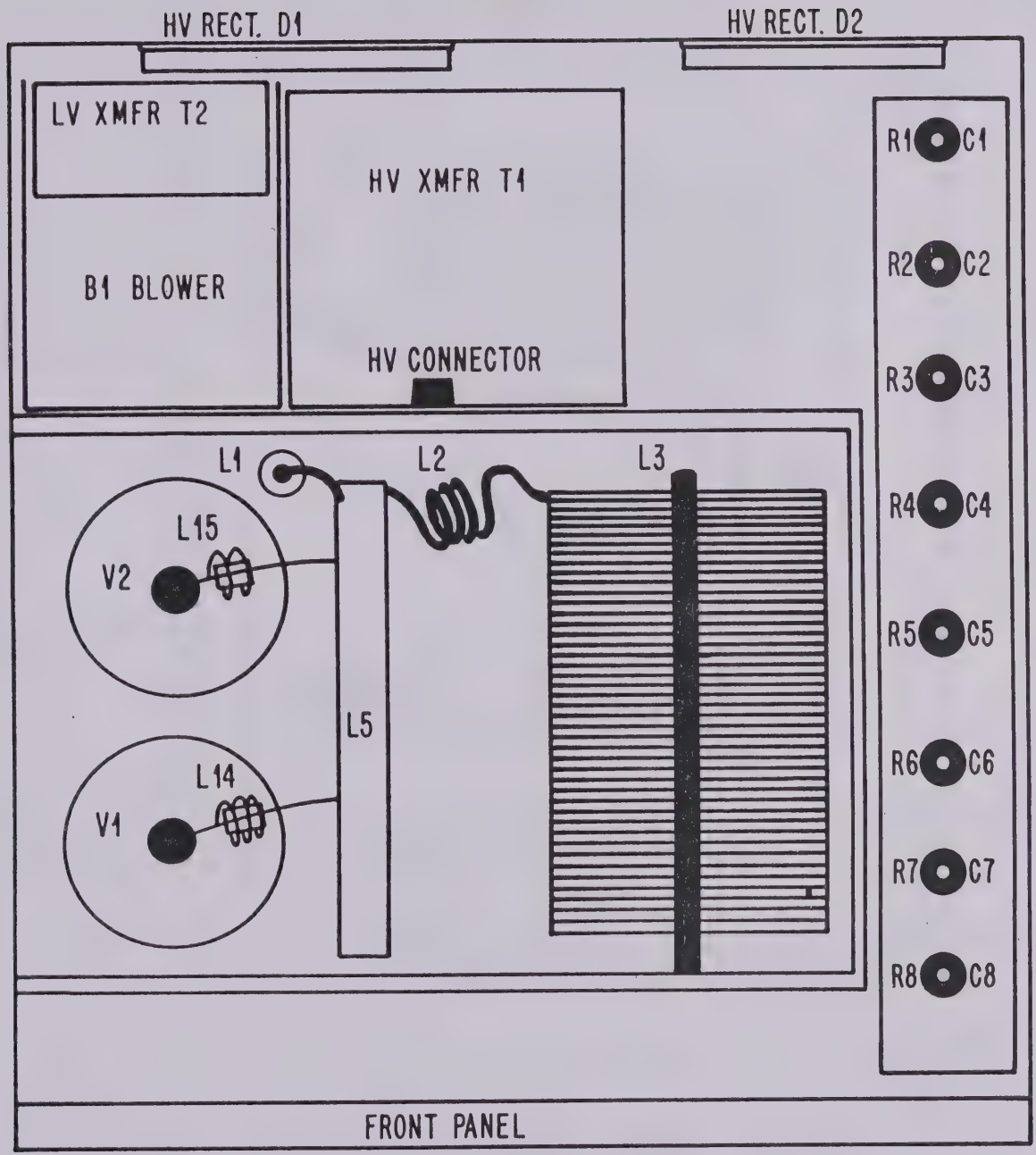
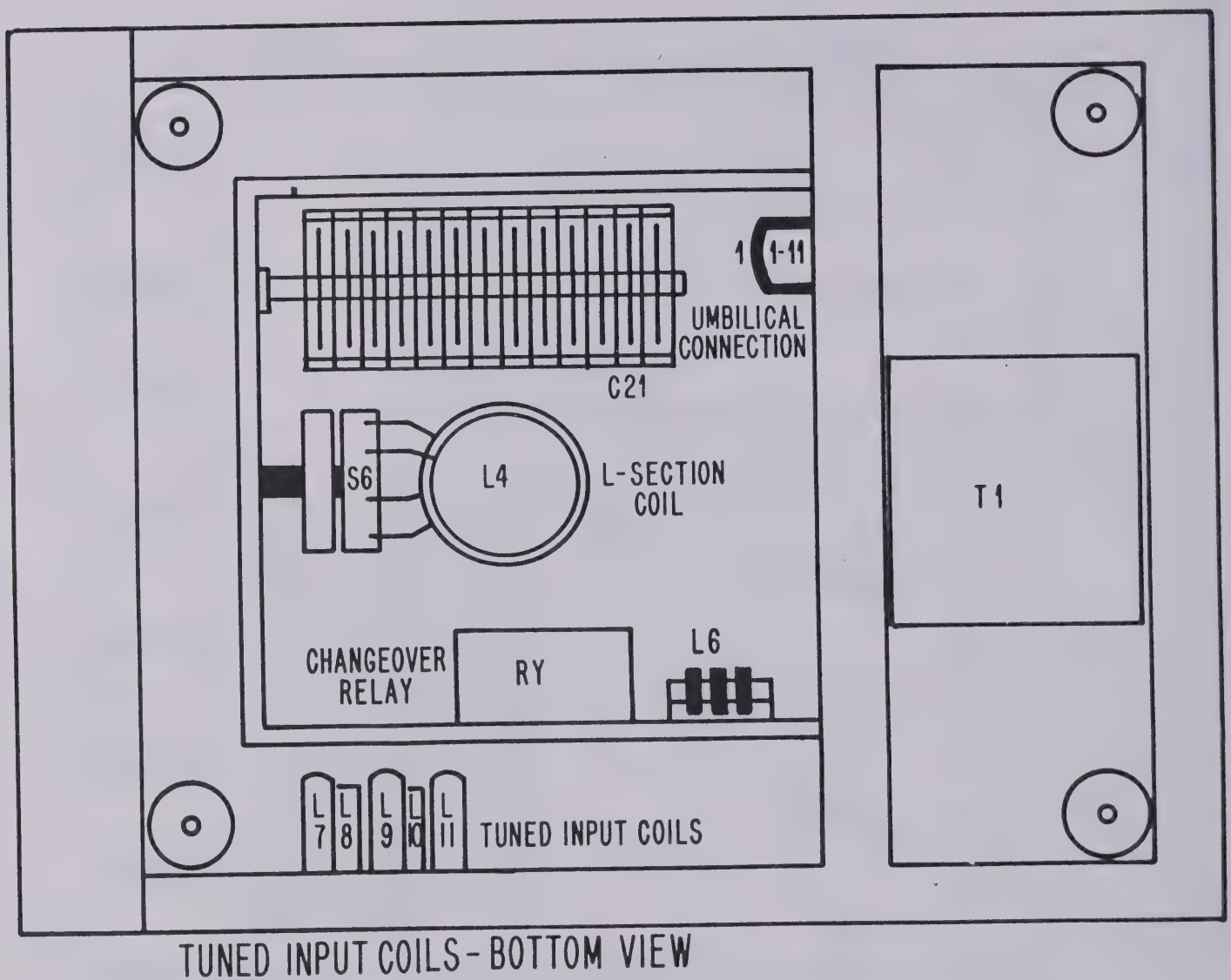


Figure 3. 2KD-5 Top View.



TUNED INPUT COILS - BOTTOM VIEW

Figure 4. 2KD-5 Bottom View.

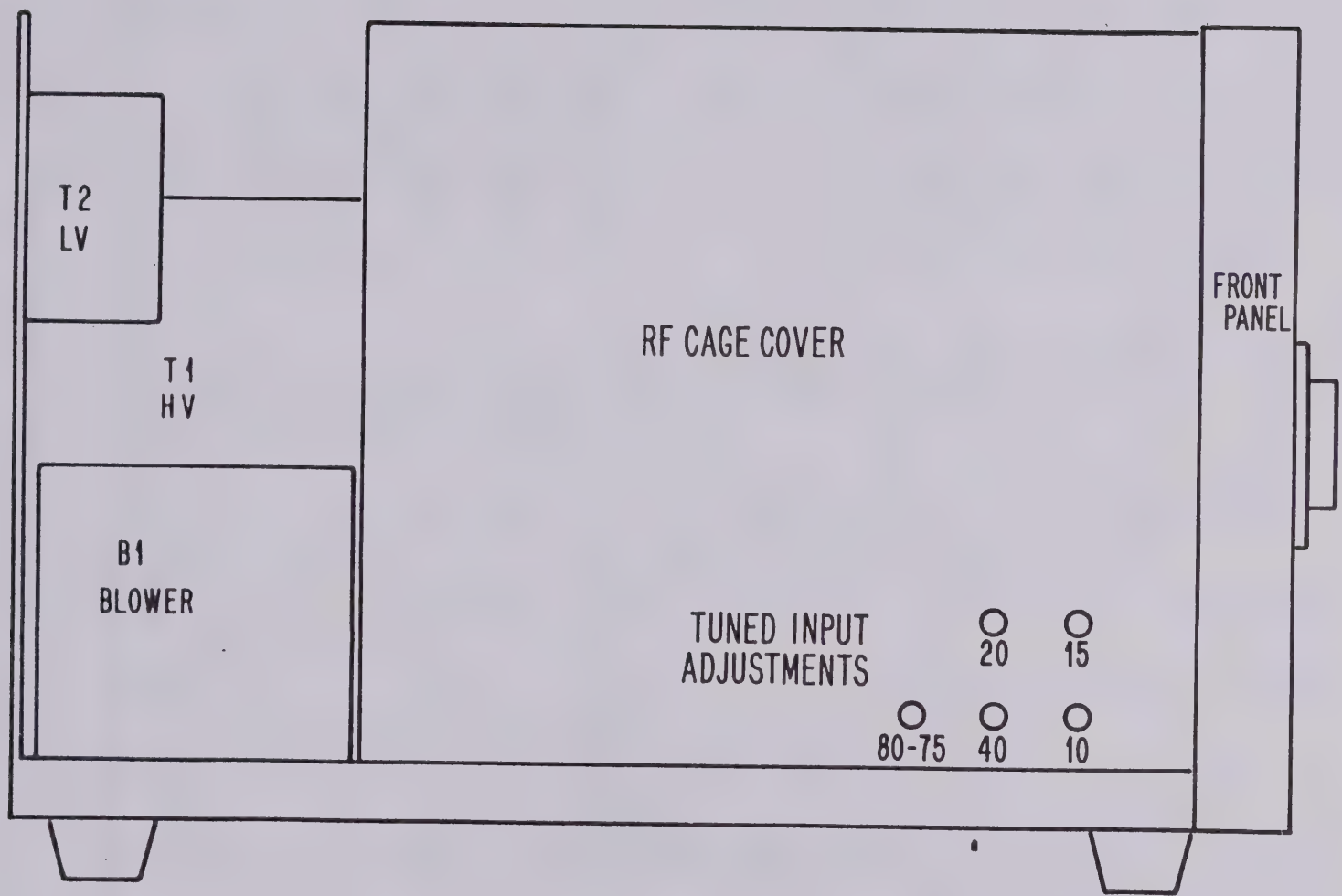


Figure 5. 2KD-5 Side View.

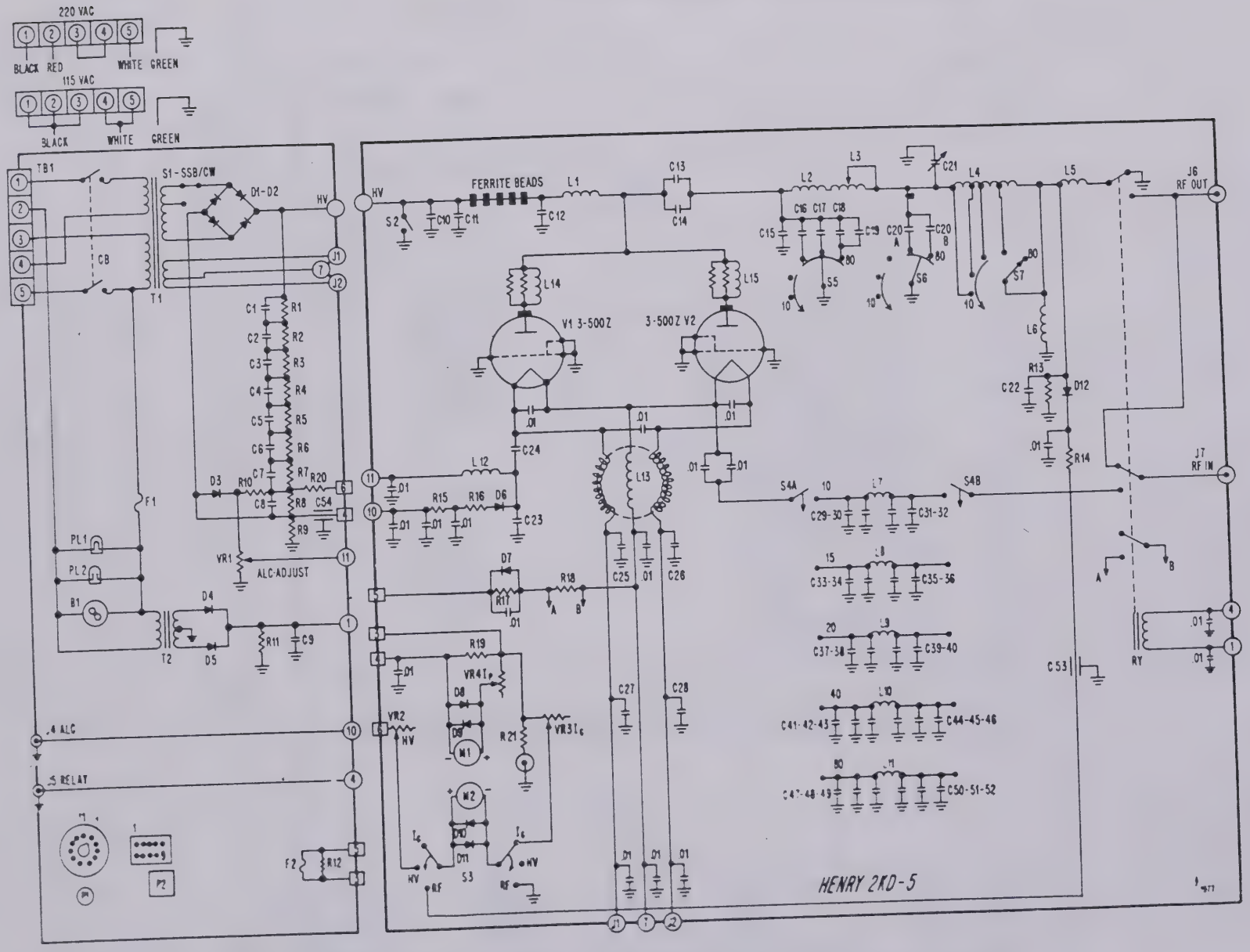


Figure 6. 2KD-5 Schematic Diagram.

TABLE 1. CALIBRATION DATA SERIAL No. .....

The figures inserted at the factory are approximate settings for a 52 ohm load with an SWR of 1:1.

FACTORY DATA

BAND	Freq. – MHz	SSB TUNE	SSB LOAD	SSB OUTPUT	CW TUNE	CW LOAD	CW OUTPUT
80	3,600						
	3,900						
40	7,100						
	7,200						
20	14,100						
	14,200						
15	21,100						
	21,200						
10*	28,100						
	28,500						

* EXPORT UNITS ONLY

This table has the factory calibration data for this amplifier. There is a column in the table for TUNE and LOAD settings for SSB and CW operation.

After you have correctly tuned the amplifier to one of your frequent operating frequencies, record the control settings in the table for future reference. These values should hold constant as long as the load does NOT change. The factory data is only an approximation to aid in tuning the amplifier the first time, and the actual readings can vary considerably, depending on the load.

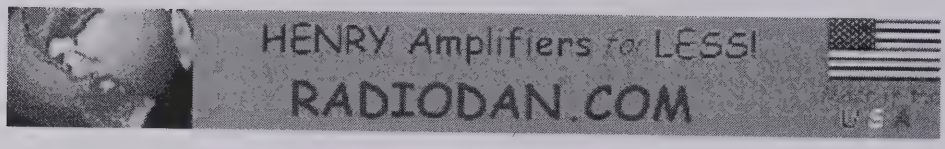
BAND	Freq. – MHz	SSB TUNE	SSB LOAD	SSB OUTPUT	CW TUNE	CW LOAD	CW OUTPUT
80							
40							
20							
15							
10*							

* EXPORT UNITS ONLY

Henry Radio Amplifiers

HENRY KNOWS RF POWER!

Past Amplifier summary

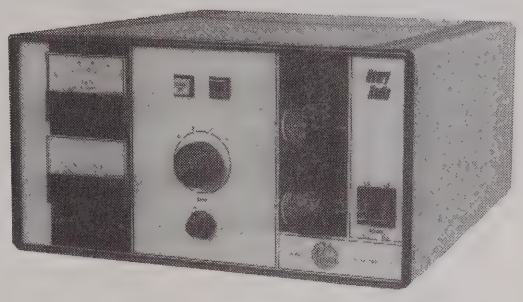


See all the new models

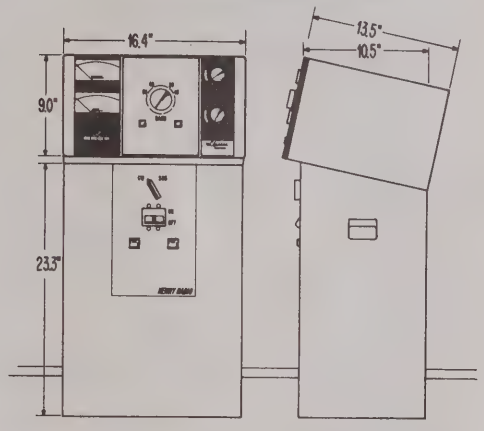
Model	Dates of Manufacture	Tube Complement	Frequencies	Configuration
1KD-5	1980-1988	3-500Z x 1	3.5-30 MHz	Desk-1 piece
2K	1963-1965	3-400Z x 2	3.5-30 MHz	Console
2KD	1963-1965	3-400Z x 2	3.5-30 MHz	Desk-2 piece
2K2	1965-1967	3-400Z x 2	3.5-30 MHz	Console
2KD2	1965-1967	3-400Z x 2	3.5-30 MHz	Desk-2 piece
2KD Standard	1996-1998	3-500Z x 1	3.5-30 MHz	Desk-1 piece
2K3	1967-1970	3-500Z x 2	3.5-30 MHz	Console
2KD3	1967-1970	3-500Z x 2	3.5-30 MHz	Desk-2 piece
2K4	1970-1980	3-500Z x 2	3.5-30 MHz	Console
2KD4	1970-1980	3-500Z x 2	3.5-30 MHz	Desk-2 piece
2K-4A	1978-1980	3-500Z x 2	3.5-30 MHz	Console
2KD5	1980-1984	3-500Z x 2	3.5-30 MHz	Desk-1 piece
2K Classic	1980 to 2004	3-500 x 2	3.5-30 MHz	Console
2K Classic X	1982 to 2004	3-500 x 2	3.5-30 MHz	Console-HD supply
2KD Classic	1984 to 2005	3-500 x 2	3.5-30 MHz	Desk-1 piece
2K Ultra	1972-1976	8873 x 2	3.5-30 MHz	Desk –2 piece
3K	1967-1970	3-500Z x 2	3.5-30 MHz	Console-HD supply
3KA	1970-1978	3-500Z x 2	3.5-30 MHz	Console-HD supply
3K Classic – 8877	1980-1984	8877/3CX1500A7	3.5-30 MHz	Console-HD supply
3K Classic X Mk II	1984 to 2004	3CX1200A7	3.5-30 MHz	Console-HD supply
3KD Premier	1985-1999	3CX1200D7	1.8-30 MHz	Desk-1 piece
3KD Premier – 8877	1999 to 2003	8877/3CX1500A7	1.8-30 MHz	Desk-1 piece
3KD Classic	1996-1998	3CX1200D7	3.5-30 MHz	Desk-1 piece
3K Premier	1985 to 2005	3CX1200A7	1.8-30 MHz	Console-HD supply
3K Ultra	1991 to 2005	3CX1200D7	1.8-30 MHz	2 piece-Remote Tune

HENRY RADIO

PREMIER SERIES



All of the quality and dependability that has made Henry amplifiers famous...plus the 160 meter band and QSK break-in-key.
Amplifiers for the discriminating amateur who refuses to compromise.

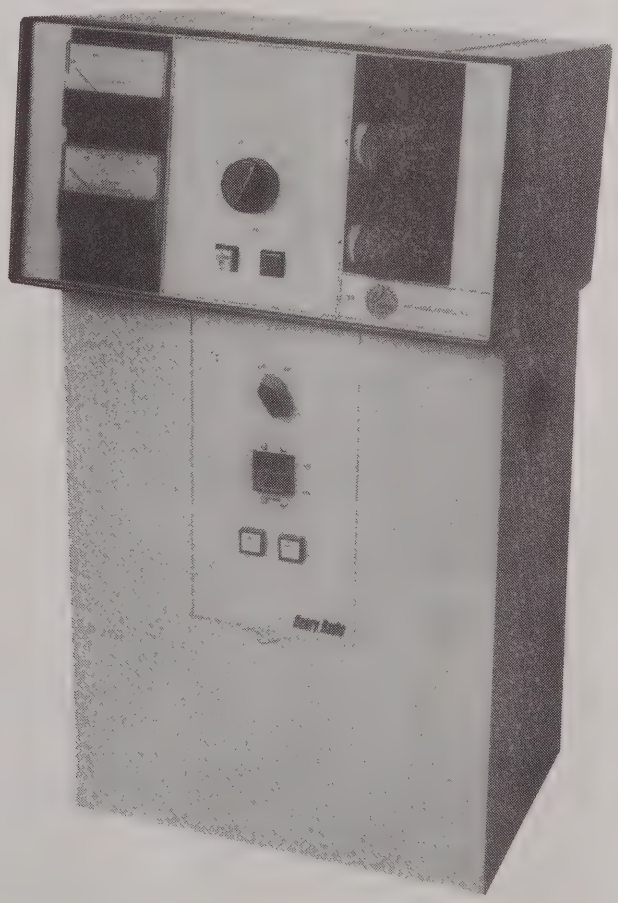


Henry Radio presents the Premier series of high quality linear RF power amplifiers. The 3K Premier is a floor console, and the 3KD Premier is a desk top unit. Both models are designed for amateur, military, commercial, or industrial users. These linears operate on the 160 meter amateur band and most frequencies between 3.5 and 30 MHz.

Both models incorporate the rugged, reliable Eimac 3CX1200A7 ceramic transmitting tube. This tube offers approximately 13 dB of gain (about 20 times the drive power) making it an ideal match for lower powered solid state transceivers.

The Premier amplifiers are the first linears ever supplied by Henry Radio which will operate on the 160 meter amateur band. They also feature a professional grade vacuum antenna relay which allows QSK operation.

The 3K Premier floor console offers the commercial grade DC power supply which has made Henry amplifiers famous for nearly 30 years. Compare the 200 pound weight of the 3K Premier to other amplifiers sold for the same or more money! See if the com petition offers some of the following features - - a resonated DC filter choke, an oil filled filter capacitor, 100 watt bleeder resistors, and 15 KV rectifiers.



The desk model 3KD Premier offers many of the same power supply features in a lighter duty package. Both linears use an identical RF chassis.

Several RF design features guarantee the sharpest, most linear, most reliable signal output from any amplifier available in today's market. The Premier design includes a unique silver plated variable tank coil for the TUNE control. Our design goal is a Q of between ten and twelve on each band resulting in higher operating efficiency, greater linearity, and superb attenuation of unwanted signals. Tuned cathode-pi input circuits are used in all of our models to allow matching to solid-state transceivers. All of our amplifiers use aluminum cabinets and double RF shielding to offer maximum attenuation of cabinet radiation.

All Henry amplifiers use only the highest quality, most reliable components. They are fashioned to the exacting requirements of the commercial, military, or industrial user who requires trouble-free operation year after year. These amplifiers offer an exceptional simplicity in their grounded grid design, without sacrificing any performance specifications.

We invite comparison of our Premier models with any other commercially available amplifier. The discerning buyer will find that there is no comparison. All Henry amplifiers are backed with a long history of continuing, solid performance.

Talk with the owner of a Henry amplifier. You will find out what it is like to own the very best.

PREMIER SERIES SPECIFICATIONS

TYPE AND FUNCTION OF EQUIPMENT: The 3KD Premier is a desk top 1500 watt PEP output RF linear power amplifier which operates on 160 meter amateur band and most frequencies between 3.5 and 30 MHz.

The 3K Premier is a floor console type 2500 watt PEP output RF linear power amplifier which operates on the 160 meter amateur band and most frequencies between 3.5 and 30 MHz.

Both models can be used for communication, industrial, or scientific purposes.

TYPE OF EMISSION: SSB, AM, CW, FM, RTTY, PULSE

OUTPUT POWER: 3KD Premier: 1500 w PEP nominal
750 w DC nominal
3K Premier: 2500 w PEP nominal
1500 w DC nominal

GAIN : 15 times input - nominal
20 times input on some frequencies

DRIVE POWER : 100 watts nominal

TUBE COMPLEMENT: One Eimac 3CX1200A7 ceramic transmitting triode.

DUTY CYCLE : Continuous duty at rated output.

DIMENSIONS: Desk: 9.5"H x 17.3" W x 22" D.
Console: 32.8" H x 17.3" W x 16" D.

WEIGHT : Console : 200 pounds. Desk : 100 pounds.

COOLING : Forced air cooling.

POWER REQUIREMENTS: 3 wire, single phase, 60 Hz
230 VAC, 30 amps.
NOTE: All amplifiers can be set up for 50 Hz operation, or 200 VAC operation, or 2 wire 220 VAC operation -- but you must specify need when you order the amplifier.

ALC CIRCUIT: An ALC feedback circuit is provided to prevent overdrive from a high power exciter.

OUTPUT IMPEDANCE: 50 ohms unbalanced.

INPUT IMPEDANCE : Tuned input circuits are used to insure a 50 ohm input impedance at amateur bands. The impedance may vary between standard bands.

NOISE LEVEL: 40 dB down or better below one tone carrier at 1000 watts output.

FREQUENCY RANGE: 160 meters - 1.8 to 2.0 Mhz.
80 meters - 3.5 to 4.0 Mhz.
40 meters - 7.0 to 7.5 Mhz.
20 meters - 14.0 to 14.5 Mhz
15 meters - 21.0 to 21.5 Mhz.
*10 meters - 28.0 to 30.0 Mhz.
* Note: Only on units sold outside the U. S.

NOTE: The amplifiers will operate on most frequencies between 3.5 and 30 MHz

METERING : Two panel meters monitor plate voltage, plate current, and grid drive.

HARMONIC AND SPURIOUS RADIATION: Better than 50 dB down on harmonics. Third order IMD better than 35 dB down at full output.

CONTROLS : Band selector, load control, tune control, meter switch, standby switch, SSB/CW switch, circuit breaker ON/OFF, and primary fuses.

REAR PANEL CONNECTIONS : RF input (BNC), RF output (UHF), ALC jack (RCA), Relay jack (RCA).

RELAY KEYING: A built-in DC power supply operates at 26 VDC nominal to key the antenna relay when the relay jack is shorted to ground.

PROTECTIVE DEVICES: High voltage shorting switch, air flow switch on the blower, primary fuses, primary circuit breaker, and cathode fuse.

PLATE VOLTAGE : Desk : SSB: 3000 - 3200 VDC
CW: 2000 - 2200 VDC
Console : SSB: 3800 - 4000 VDC
CW: 2800 - 3000 VDC

NOTE: The plate voltage figures are nominal, and vary with the line voltage at the operating position.

OTHER FEATURES:

Conservative power supply components for superb dynamic regulation in the high voltage supply.
Resonant choke input (console) and oil filled capacitor to improve high voltage regulation.
All aluminium cabinets with double shielding in the RF areas to minimize cabinet radiation.
Pi-L plate circuit with silver plated tank coil to insure the cleanest most efficient output.
Backed by a 25 year history of the most reliable equipment available for the amateur market.

HENRY RADIO

2050 S. Bundy Dr. Los Angeles, CA 90025
(213) 820 - 1234

All specifications subject to change without notice!

RELAY	NOMINAL OUTPUT	NOMINAL GAIN	NOMINAL B+	ALC	RF CONNECTORS	MAXIMUM DRIVE	RACK MOUNT	RF DECK
SUPPLIED 12 VDC	1500 WATTS PEP	10 dB 10 x DRIVE	3000 VDC (SSB) 2000 VDC (CW)	YES	RF IN - BNC RF OUT - UHF	150 WATTS	AVAILABLE	NOT AVAILABLE
SUPPLIED 12 VDC	1200 WATTS PEP	10 dB 10 x DRIVE	4000 VDC	YES	RF IN - BNC RF OUT - UHF	120 WATTS	AVAILABLE	NOT AVAILABLE
SUPPLIED 12 VDC	1500 WATTS PEP	10 dB 10 x DRIVE	3200 VDC (SSB) 2200 VDC (CW)	YES	RF IN - BNC RF OUT - UHF	150 WATTS	NOT AVAILABLE	NOT AVAILABLE
SUPPLIED 12 VDC	2000 WATTS PEP	11 dB 12 x DRIVE	3800 VDC (SSB) 2800 VDC (CW)	YES	RF IN - BNC RF OUT - UHF	150 WATTS	NOT AVAILABLE	AVAILABLE
SUPPLIED 12 VDC	1500 WATTS PEP	11 dB 13 x DRIVE	4000 VDC	YES	RF IN - BNC RF OUT - UHF	150 WATTS	AVAILABLE	NOT AVAILABLE
SUPPLIED 12 VDC	2500 WATTS PEP* 1500 WATTS CONT.	13 dB 20 x DRIVE	3800 VDC (SSB) 2800 VDC (CW)	YES	RF IN - BNC RF OUT - UHF	150 WATTS	NOT AVAILABLE	AVAILABLE
SUPPLIED 26 VDC	3500 WATTS PEP 1500 WATTS CONT.	13 dB 20 x DRIVE	4200 VDC (SSB) 2800 VDC (CW)	YES	RF IN - BNC RF OUT - N	200 WATTS	NOT AVAILABLE	AVAILABLE
SUPPLIED 26 VDC	1500 WATTS PEP	11 dB 13 x DRIVE	3500 VDC	YES	RF IN - BNC RF OUT - UHF	150 WATTS	AVAILABLE	NOT AVAILABLE
SUPPLIED 26 VDC	2500 WATTS PEP* 1500 WATTS CONT.	11 dB 13 x DRIVE	3800 VDC (SSB) 2800 VDC (CW)	YES	RF IN - BNC RF OUT - N	150 WATTS	NOT AVAILABLE	AVAILABLE
SUPPLIED 12 VDC	1200 WATTS PEP 300 WATTS CONT.	13 dB 20 x DRIVE	2500 VDC (SSB) 2000 VDC (CW)	NO NO	RF IN - N RF OUT - N	75 WATTS	AVAILABLE	AVAILABLE
SUPPLIED 26 VDC	2000 WATTS PEP 1500 WATTS CONT.	13 dB 20 x DRIVE	3800 VDC (SSB) 2800 VDC (CW)	NO	RF IN - N RF OUT - N	100 WATTS	NOT AVAILABLE	AVAILABLE
SUPPLIED 12 VDC	1200 WATTS PEP 300 WATTS CONT.	13 dB 20 x DRIVE	2500 VDC (SSB) 2000 VDC (CS)	NO	RF IN - N RF OUT - N	75 WATTS	AVAILABLE	AVAILABLE
OPTIONAL 26 VDC	2000 WATTS PEP 1500 WATTS CONT.	13 dB 20 x DRIVE	3800 VDC (SSB) 2800 VDC (CW)	NO	RF IN - N RF OUT - N	100 WATTS	NOT AVAILABLE	AVAILABLE
OPTIONAL 12 VDC	1000 WATTS PEP 300 WATTS CONT.	10 dB 10 x DRIVE	2500 VDC (SSB) 2000 VDC (CW)	NO	RF IN - N RF OUT - N	75 WATTS	AVAILABLE	AVAILABLE
OPTIONAL 26 VDC	1500 WATTS PEP 1000 WATTS CONT.	10 dB 10 x DRIVE	2500 VDC	NO	RF IN - N RF OUT - N	100 WATTS	NOT AVAILABLE	AVAILABLE

OTHER FEATURES: All amplifiers protected by fuses, circuit breakers, and HV shorting bars * * All amplifiers biased for class AB linear operation, unless ordered otherwise, for pulse, AM, FM, SSB, CW, RTTY, etc. modes * * Meters supplied for high voltage, plate current, grid current * * All amplifiers supplied with tuned input circuits to match solid state exciters * * Input and output impedance of 50 ohms unbalanced * * Air flow protection switch supplied on all larger tubes * * Standby mode to leave amplifier on, but out of the circuit * * Made in the USA * * 1 year warranty * * 30+ years of amplifier manufacturing exper. *** Special amplifiers available in this frequency range with a tuneable bandwidth of aobut 5% of the center frequency.

GENERAL SPECIFICATIONS FOR HENRY AMPLIFIERS

MODEL	TYPE	TUBE	FREQUENCY RANGE	DIMENSIONS	WEIGHT	AC REQUIREMENTS
2KD CLASSIC	DESK MODEL	3-500Z x 2 GLASS	3.5 TO 30 MHZ** 5 BANDS	9.5" H X 17.25" W X 19.75" D	78 LBS	115 VAC-30 AMP 50/60 HZ 230 VAC-15 AMP 50/60 HZ
2KD STANDARD	DESK MODEL	3-500Z GLASS	3.5 TO 30 MHZ** 5 BANDS	8.8" H X 15.00" W X 16.50" D	75 LBS	115 VAC-30 AMP 50/60 HZ 230 VAC-15 AMP 50/60 HZ
2K CLASSIC	FLOOR CONSOLE	3-500Z X 2 GLASS	3.5 TO 30 MHZ** 5 BANDS	32.75" H X 16.50" W X 15.0" D	125 LBS	115 VAC-30 AMP 50 OR 60 230 VAC-15 AMP 50 OR 60
2K CLASSIC X	FLOOR CONSOLE	3-500Z X 2 GLASS	3.5 TO 30 MHZ** 5 BANDS	32.75" H X 16.50" W X 15.0" D	195 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY
3KD CLASSIC	DESK MODEL	3CX1200Z7 CERAMIC	3.5 TO 30 MHZ** 5 BANDS	8.80" H X 15.00" W X 16.5" D	85 LBS	230 VAC-30 AMP 50/60 HZ
3K CLASSIC X MARK II	FLOOR CONSOLE	3CX1200A7 CERAMIC	3.5 TO 30 MHZ** 5 BANDS	32.75" H X 16.50" W X 15.0" D	195 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY
5K CLASSIC*	FLOOR CONSOLE	3CX1200A7 X 2 CERAMIC	3.5 TO 30 MHZ** 5 BANDS	32.75" H X 16.50" W X 15.0" D	225 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY
3KD PREMIER	DESK MODEL	3CX1200Z7 CERAMIC	1.8 TO 30 MHZ** 6 BANDS	9.50" H X 17.25" W X 22.7" D	100 LBS	230 VAC-30 AMP 50/60 HZ
3K PREMIER	FLOOR CONSOLE	3CX1200Z7 CERAMIC	1.8 TO 30 MHZ** 6 BANDS	32.75" H X 16.50" W X 15.0" D	195 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY
2006A	DESK MODEL	3CX800A7 CERAMIC	50-54 MHZ 30-100 MHZ***	9.50" H X 17.25" W X 19.7" D	80 LBS	115 VAC-30 AMP 50/60 HZ 230 VAC-15 AMP 50/60 HZ
3006A	FLOOR CONSOLE	3CX1200Z7 CERAMIC	50-54 MHZ 30-100 MHZ***	32.75" H X 16.50" W X 15.0" D	195 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY
2002A	DESK MODEL	3CX800A7 CERAMIC	144-148 MHZ 100-300 MHZ***	9.50" H X 17.25" W X 19.7" D	80 LBS	115 VAC-30 AMP 50/60 HZ 230 VAC-15 AMP 50/60 HZ
3002A	FLOOR CONSOLE	8877/3CX1500A7 CERAMIC	144-148 MHZ 100-300 MHZ***	32.75" H X 16.50" W X 15.0" D	195 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY
2004A	DESK MODEL	3CX800A7 CERAMIC	430-440 MHZ 300-500 MHZ***	9.50" H X 17.25" W X 19.7" D	80 LBS	115 VAC-30 AMP 50/60 HZ 230 VAC-15 AMP 50/60 HZ
3004A	FLOOR CONSOLE	8938 CERAMIC	430-440 MHZ 300-500 MHZ***	28.00" H X 22.00" W X 22.0" D	250 LBS	200-250 VAC-30 AMPS 50 OR 60 HZ SET AT FACTORY

OTHER FEATURES: All aluminum cabinets with double shielding in the RF areas to minimize cabinet radiation * * DC low voltage relay system for safe, hum-free operation * * Conservative power supply components for superb dynamic regulation in the high voltage power supply * * All amplifiers with antenna relays are keyed by a shorted relay to ground supplied by the exciter * * All amplifiers used forced air tube cooling with squirrel cage type blowers * * Harmonic and other spurious emissions better than 50 dB down for HF amplifiers, and better than 60 dB down for VHF amplifiers.

* Export model amplifiers.

**28 MHz operation not supplied in the USA.